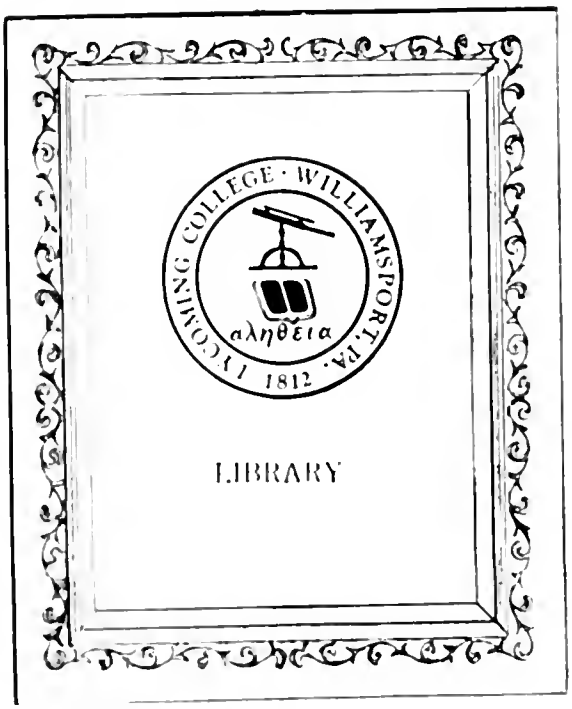
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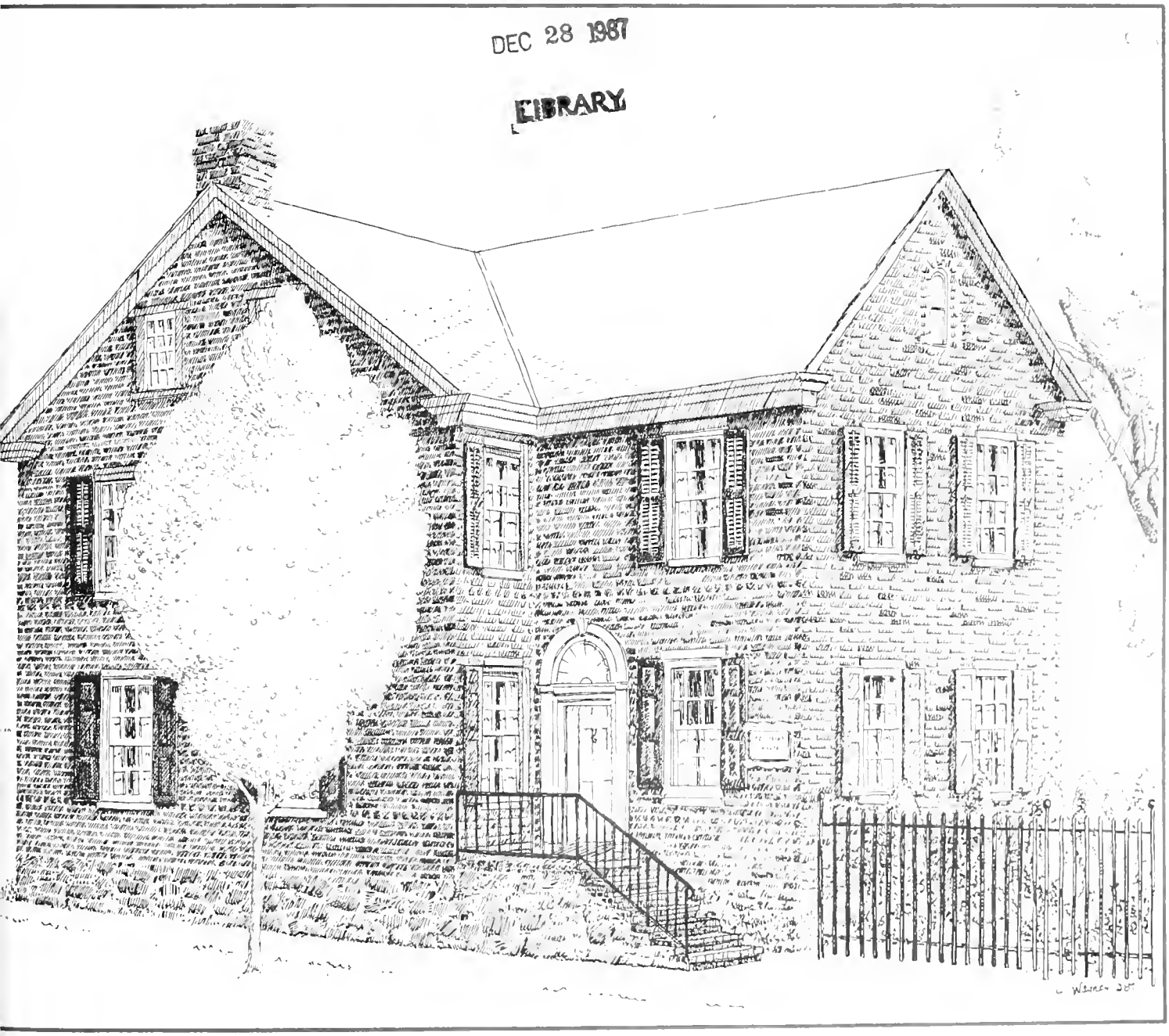

President Blumer Comments

Dear Friends:

Perhaps we should admit it. As Christmas approaches, "Humbug" is in our hearts long before "Joy to the World" is on our lips. Some years we wonder if we will ever get the Christmas spirit. Like aged crones at a prom, painfully aware of our wrinkles and arthritis, we complain when invited to dance about the revelry of youth who know not shame nor what it is to blush. We are afraid to wonder how we too might break out of the cocoons that slowly wrapped our spirits in business, boredom and banality. It is truly a miracle that at Christmas the child in us begins to exercise. Wooden joints and muscles dormant since we last laughed out loud at Grandma's house begin to move. Pinnochio comes to life.

How can we recapture the joy of Christmas? What should one do while waiting in the delivery room for a holy birth?

Christmas celebrations for the most part are attempts to reinact our first encounters with Christmas joy. We are convinced that if we could only restage the original scene, we could then recapture its inspiration and pristine joy. Family traditions safely preserved in ornaments and mementos are taken out of moth balls and hung around the house. Ancient carols are set loose again to explore nooks and corners in our lives that are as empty as they have been silent. Menus more sacred to a secular age than is the communion host reappear on the dining table. And on Christmas eve we revisit the shrines of childhood seeking the spirit of Christmas Past. Where does the magic hide? Why is Christmas afternoon so sad? Why do the needles fall off the tree?

Shortly before Halloween, Lycoming College brought Canada's Royal Winnipeg Ballet to Williamsport. The spirit of Christmas broke in upon us early this year. Norman Vesak, who choreographed the second major section of the program, whether intentionally or by marvelous chance, provided an inspiring answer to our questions about Christmas. How can we recapture its joy? What should one do while waiting in the delivery room for a holy birth?

Belong! The answer came to life on the Capitol Theatre stage, dramatized in dance as *Pas de Deux* from *What To Do Till the Messiah Comes.* What art form could be more appropriate to herald the message of Christmas, announcing that we belong? Before our very eyes we saw clearly at once both the question and the answer. Selfish self-imposed isolation spawns a ubiquitous silence that deadens our spirits. Cosmic loneliness follows to shroud our lives in business, boredom and banality. We shrivel and die, all because we are unwilling to belong.

In the bleak midwinter a star shines; a church bell tolls...Belong! An invitation to dance breaks the chill. Christmas reassures us we belong to God. We belong!

Sincerely,

Frederick E. Blumer

President

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The NIH-Lycoming Connection

By: Molly Sue Wentz

The door of opportunity opened this past summer and two biology majors at Lycoming College accepted the challenge to participate in a research project at the National Institutes of Health (NIH) in Washington, D.C.

Lycoming students may participate in independent research projects/internships under the supervison of alumni now working at the Institutes. Sue Preston, a 1974 graduate of Lycoming, has been working at NIH for nearly 14 years. Presently, she is a biologist for the Office of Biologics in the Division of Blood and Blood Products at the Food and Drug Administration (FDA). (See related article on Preston, Page 3.) When the opportunity arose for student researchers, Preston contacted the biology and chemistry departments at Lycoming because she knew the students could fulfill the challenge NIH was offering. Dan Buriak '88 and Eric Schreiner '88 applied and were accepted.

Buriak was given a choice of three projects at NIH and selected protein stability because of the HPLC (High Performance Liquid Chromotography) methods he would be employing. Chromotography is a way of separating proteins from one another through various means, such as size or charge. Although Buriak works with basic paper chromotography at Lycoming, he thought it would be beneficial to learn different types of chromotography and the computer capabilities for enhancing these techniques.

HPLC was developed when biochemists needed a faster and more precise method to separate proteins. Prior to the development of HPLC, biochemists used hand-filled columns, two or more feet in length that took 24 to 48 hours to separate proteins. That length of time could damage the activity or binding abilities of proteins, making research efforts difficult. Today, with the latest HPLC equipment, the procedure uses a volume of less than one milliliter and takes about 40 minutes.

Buriak's research at NIH was oriented toward the applied aspect of the Food and Drug Administration. As part of the protein chemistry research, he studied monoclonal antibodies that had lost potency. Schreiner's NIH research, (for which he received independent study credit through Lycoming College), was concentrated in tissue typing. Although the culturing assay was completed in another area from Buriak, the results of Schreiner's study were needed for the larger research project that would determine why antibodies were losing potency. (See related article on Schreiner, Page 4.)

> *"Lycoming's atmosphere prepared me for a similar environment at NIH. Sue Preston explained the objectives of the forthcoming collaborative research project and I then proceeded to develop the necessary techniques to reach those goals."*

An antibody is one of many molecules the body utilizes to fight disease. An individual can make millions of different types of antibodies, depending upon the environmental exposures to different micro-organisms. Each type of antibody is secreted by cells specific for that type. A monoclonal antibody is derived from fusing antibody-secreting cells with fast-growing, immortalized cells. These "hybridoma" cell lines will secrete large amounts of antibody molecules in tissue culture or when placed in mouse abdomens. The antibody molecules can be harvested and purified for use in research and to diagnose and treat diseases.

Dan Buriak '88 demonstrates the old column system used in protein separation.

Monoclonal antibodies are immunoglobulin molecules which are used therapeutically and are approved for use by the Office of Biologics Research and Review, Food and Drug Administration. Part of the approval process involves developing and performing assays to monitor the potency and safety of these drugs. Multiple techniques are used, including determining size of the molecule, charge of the antibody, amount of modification and contaminants in the solution. One of the monoclonal antibodies Buriak studied is OKT 3, which is used for preventing and treating rejection of kidney transplants. Known as ORTHOCLONE OKT 3 Sterile Solution, this solution is a mouse-derived monoclonal antibody to a specific antigen on human T cells. ORTHOCLONE OKT 3 reverses graft rejection in renal (kidney) transplant patients possibly by blocking the immune function of all T cells which play a major role in causing acute renal rejection.

In continuing his research beyond HPLC separation, Buriak also modified a technique involving electrophoresis, which is the movement of suspended proteins through a gel by an electrical force applied to electrodes in contact with the suspension. This technique separated proteins based on their net charge. This helped him further analyze why the monoclonal antibodies were losing their potency. He shared his expertise with other doctors in the laboratory.

For many students, undertaking a research project at an institution like NIH may have caused some anxiety. Buriak, however, felt that Lycoming College had prepared him well for his summer experience. "I see it as one on one instruction vs. trying to learn from a television screen," he says. Buriak finds that the techniques learned in his Lycoming classes can be applied and are directly related to research being done in the scientific field. "The chromotography studies I did in plant class are related here medically. It's basically a modification of the same principles." Buriak believes that someone following a strict medical curriculum wouldn't have the opportunity.

He praises Lycoming's biology and chemistry personnel. "I don't feel that there has been anything lacking as a department. The science faculty teach the necessary underlying concepts despite the lack of an ideal teaching environment." He finds that if you learn the basic skills of electrophoresis separation or some other procedure, no matter if you are working on equipment that is somewhat old or that is very recent, you will understand the process behind the procedure. "Here I'm working with state-of-the-art equipment and I realize that since I've learned the basics, the rest is easy."

Personal instruction is an important educational difference at Lycoming. Buriak believes that without dedicated teaching a student might not learn basic ideas or the underlying reasoning behind separation techniques or other procedures. "You need basic understanding. I realize *what* this instrument is doing. I realize the basics of *how* it separates proteins." He believes that if students had instruments that did everything for them, then perhaps a complete understanding of the process wouldn't be achieved. Without understanding the basic concepts of a procedure, faulty conclusions may be drawn.

Buriak is excited for the incoming freshmen who chose biology as their major. "There is going to be even more of an opportunity for them to excel because of the forthcoming new science facility. No place is more deserving of the new science building than our college."

Buriak recalls his first experience with Lycoming students and professors associated with the biology and chemistry departments. He had the opportunity to spend a week with a Lycoming senior pre-med student during his senior year of high school. He sat through Lycoming classes in genetics, biology, microbiology and chemistry. His first experience was with Dr. Edward Gabriel, assistant professor of biology. By the end of the week he could see individualized instruction at the upper levels. The genetics class was often held as a conference where students discussed the latest scientific discoveries and recent research articles.

Buriak remembers undertaking major labs with only five or six people. "Each student completed a designated section of the lab independently and then the results were discussed in a group setting." He believes this type of atmosphere fosters independent work.

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FDA Biologist in the Lab and on the Road

Fourteen years ago, Sue Preston '74 never dreamed she would now be a biologist for the Office of Biologics in the Division of Blood and Blood Products at the Food and Drug Administration (FDA) in Washington, D.C. Since her arrival at the National Institutes of Health almost immediately after her graduation from Lycoming, Preston has worked in several different branches. In 1981 she was transferred to the FDA's Plasma Derivatives Laboratory to conduct research (both basic and applied) and to help with product regulation.

According to Preston, the basic research project she is working on involves the AIDS virus. "I'm looking at T-cell (cells that help the body make antibodies) interaction and what is necessary to make an immune response; I'm trying to figure out how to make a virus not require T-cell help to elicit an immune response." Since AIDS patients lose their T-cells, Preston is trying to find a way for the body to make an immune response in the absense of T-cells.

Sue Preston '74, biologist for the Office of Biologics in the Division of Blood and Blood Products at the Food and Drug Administration.

To help prove her theory, she uses an animal model which lacks T-cell immune response. Modifying the virus, may cause the mice to make a T-cell independent response. Eventually she will conduct some *in vitro* studies with cells that come from normal healthy individuals and then expand her study to include cells from patients with AIDS.

Preston conducts work on several applied research projects. The project involving monoclonal antibody stability, shared with Buriak, came out of her work on immunoglobulin stability. The results show that the monoclonal antibody is losing potency by a mechanism different than the one widely thought to be responsible for decreases in potency of immunoglobulin preparations. Another research project focuses on what effect the implementation of screening tests for AIDS has on the types and potencies of different antibodies in therapeutic immunoglobulin solutions. "I'm looking to see if the screening has had any adverse impact on other types of antibodies. Often people who are at risk for AIDS are also at risk for hepatitis or other diseases." By taking those people out of the plasma pool valuable antibodies may be lost that could be used for people who don't have those antibodies and might need them. "My concern is to see that the licensed products are safe and the antibody spectrum remains the same and hasn't been decreased due to screening for AIDS or to screening for other viral disea

The reg[illegible]ect of Preston's work involves the review of man[illegible]ers' submissions to approve products for distrib[illegible]. A[illegible]ions can range from a

(Continued on page 9)

Tissue Culture at Lycoming

It isn't every day that an undergraduate has the opportunity to work at the National Institutes of Health. For biology major Eric Schreiner '88, the experience proved invaluable. Not only did he learn many new techniques during his summer independent research project at the Laboratory of Transplantation Biology in the Division of Blood and Blood Products at the Food and Drug Administration (FDA), but he was able to bring this knowledge back to Lycoming College and apply it.

According to Schreiner, "Working at NIH challenged everything I learned at Lycoming and made me aware of its application." Once he had acquired a general working knowledge of NIH's laboratory, Schreiner began his summer research project. One of his responsibilities was carrying out the other half of the antibody stability research project. While Buriak was dealing with the biochemical aspect of the decreasing potency, Schreiner was working with Kamal Mittal, the chief of the Transplantation Biology Laboratory at the FDA, on the potency aspect. His research involved incubating the T-lymphocytes with the monoclonal antibody to determine its potency by looking for cell death. According to Schreiner, "With an increase in the age of the monoclonal antibody solution, we found that there was a decrease in its effectiveness." Researchers will continue to explore the biochemical and clinical aspects of the drug.

Eric Schreiner '88 prepares cells for testing

Working in a research lab was a new experience for Schreiner. The assay he used in determining the effectiveness of the monoclonal antibody was the standard NIH microcytotoxicity assay, which permits the researcher to measure the degree of antibody-antigen reaction. Through this procedure Schreiner was able to monitor the efficiency of the monoclonal antibody in its binding to antigens on T-lymphocytes.

He also worked with established cell lines. To create a cell line, the genetic structure of the cell must be altered in some way. The cells, which originate from cancerous tissues or are themselves cancer cells, are at various stages of the cell cycle—some dividing, some growing, some dying. "I experimented with the use of lymphocyte cell lines to monitor the effectiveness of the monoclonal antibody," says Schreiner. It was through the maintenance of those cell lines that he was able to understand the basics of tissue culture.

The knowledge Schreiner gained by maintaining cell lines at NIH made it possible for him and Dr. Robert Zaccaria, associate professor of biology, to begin using the tissue culture lab at Lycoming College. Zaccaria recently returned from a sabbatical leave during which his objectives were to learn basic tissue culture techniques, to determine whether or not Lycoming could develop a modest culturing facility and to take the preparatory steps to begin a similar lab. When Zaccaria and Schreiner returned to Lycoming they pooled their knowledge and began to use the newly acquired equipment and supplies.

Obtaining the necessary equipment was a major undertaking. The college was fortunate to have Harold Lunick, president of Lunaire Environmental, Inc., a Williamsport manufacturer, donate a carbon dioxide incubator for use in the tissue culture lab. The college purchased additional support materials for the lab, including a small clean-air bench which is a filtering hood that creates a sterile working atmosphere.

The lab was ready when Schreiner returned to campus with the technical experience to assist Zaccaria. Together, they worked out the techniques for tissue isolation and the preparation of a suitable medium, a nutritional solution used to feed the tissue. Their first attempt at the culturing procedure proved successful. According to Zaccaria, the specimens in the culture "raise many questions which can be investigated with these techniques, but right now we're excited that we simply are able to maintain the cultures we're working with."

As part of the *in vitro* culture experiments, Schreiner is also trying to establish short term cultures for several other Lycoming students who need them for independent studies. These biology students, under the supervision of Zaccaria, are exploring various developmental phenomena of newts. One student is studying wound healing in the skin while the other, a pre-optometry student, is studying the regeneration of the eye's lens. "Without Eric's expertise and willingness to help these students, their *in vitro* work simply would not have progressed as it has this fall. We're very grateful," adds Zaccaria.

Looking ahead to next semester, Schreiner is considering several projects that involve *in vitro* work. For now, Schreiner feels that he owes thanks to Sue Preston '74 for affording him the opportunity to work at NIH. "I'm grateful that I chose a small school because it enabled me to get involved in this research opportunity and gave me access to such a successful alumna who helped make this wonderful experience possible." Schreiner says that he has a lot of respect for his co-workers at NIH because they permitted him to proceed with his own ideas and respected his judgment. For his part, Schreiner says he will always look for opportunities to learn and to share that knowledge with others.

—Molly Sue Wentz

I Remember Papa

By: Dorothy Long

Editor's Note: John Long served as the seventh president of the Williamsport Seminary. During his long, successful tenure, which began in 1921, Dr. Long steered the Seminary through Junior College days and saw it evolve into a fully accredited, four-year liberal arts college. His daughter, Dorothy, warmly recalls the excitement, frustration, pain, and warmth during her father's years as president.

Williamsport Dickinson Seminary and I had never met or even heard of each other until the day in State College, Pennsylvania, when I was gleefully admiring my new bedroom furniture. My mother and father came in and said, "It's been so nice to have a whole roomful of new furniture at the same time. I hate to think of leaving it." In front of my surprised eyes, Papa put his arm around her shoulder and said that perhaps there would be new furniture at the Seminary. He mentioned that it was such a good opportunity for the children to have a good education. My next actions are a blank, but if I ran true to form, there must have been quite a noisy reception to the idea that we were going to move away from the parsonage, friends and town I had known and liked so much, to a place where I wouldn't know a soul.

I got even with the powers that be by refusing to attend school after we moved. However, after two weeks, I saw the Jackson girls, Jean and Helen, having fun going into the junior school and allowed myself to be coaxed by my next-older sister, Olive Mildred, into attending. Miss Puera B. Robinson was the teacher at the time and I was impressed with her.

My oldest sister, Gladys Elizabeth, recalls being in the church for the service at which the Honorable M. B. Rich, Rev. S. Evans, Rev. W. W. Banks and another gentleman were attending to hear Papa preach and consult afterwards with him. They were members of the Board of Directors who later extended an invitation from Papa to visit the Seminary in Williamsport with the possibility of receiving the appointment as president.

On moving day, the Dodge touring car bought especially for the trip was loaded. A trunk suitcase stood upright behind the back seat, surrounded by three girls and a very heavy friend and helper. Papa, Mamma, John William, Jr. and Robert Walter were in the front seat. The other trunk suitcase was held on the running board by metal folding brackets clamped to it. It took hours to make the trip and the five miles called the "missing link" at Newberry was the worst part. Telling about that trip would fill a page!

> *"When Papa was stern he was very stern, and when he was pleased about something we did, he also let us know about that in his quiet way."*

We pulled up to the front door of the "President Apartments" at one end of the main building about eight o'clock p.m. Greeted and assisted by Mr. William Cross on the outside and Mr. J. Milton Skeath and Mr. James Sterling on the inside, we must have staggered inside, eaten what had been prepared for us, and scrambled onto mattresses laid on the floor for the children. What our parents had been through that day was shuddered at when recalled later.

President and Mrs. Long gaze at the portrait of the president immediately after the unveiling by Robert Lewis Long, grandson of the Longs. The portrait unveiling took place October 20, 1951.

I was quite thrilled that an adult would be nice enough to introduce himself to a little girl, and my opinion of Mr. Skeath and Mr. Sterling never changed in all the years I knew them. I was proud to be able to attend the large banquet given to honor Mr. Skeath upon retirement, and still have his nice handwritten note of thanks.

Since past presidents had made Mulberry Methodist Church their church home, and Papa's roommate at Dickinson College, Rev. W. W. Banks was the Minister there, Mulberry was chosen for our family to attend. Years later, my mother went with the group who moved to Market Street Church when Mulberry congregation disbanded. Pine Street Methodist Church and Mulberry Methodist Church are the two churches whose congregations yearly invited the Seminary students and faculty to an evening "social" and so on. Games, skits, music and talks became the entertainment for those evenings. The Seminary had become a college before dancing was allowed.

I remember several rooms from Bradley Hall - the girl's gymnasium in the basement, the Tripartite room, music room and the little library room. There was also a secretary's room, situated outside of the chapel, opposite the offices on the second floor of the main building. After dinner, it would be opened for anyone needing to use the books or wanting to read newspapers. Some students would try to reach the room before any faculty and hold a very short tryst. They were often disappointed to be met by the president! Libraries were not to used for socializing. Demerits were handed out by those in charge and the [illegible] were used by the male students when marching "[illegible] of penance. I especially remember the Corbett [illegible] working off their demerits. I guess the girls were restricted [illegible] their transgressions.

(Continued on page 6)

I Remember Papa *(Continued from page 5)*

The library was also the place where the bulletins were folded, and in the summer I always tried to be with those who were folding and putting them in envelopes, thereby earning a quarter. I seemed to know I wanted to be a secretary, and that purpose never wavered.

There was the square cement swimming pool opposite the gym in the basement of Bradley Hall. Olive and I recall learning to swim there, receiving abrasions in the process. It was later smashed down and a new floor put on top so the Junior College girls could take home economics.

Robert Walter was the baby when we arrived in Williamsport. Tragically he died when he was two years, 5 months old. His death is well-remembered and was spoken of many times by Mamma during her last year of illness. Bronchial diptheria killed him quickly. Anti-toxin was not yet perfected and was only allowed for him by the time it was too late. Besides the deep grief while watching Bobby throw himself from one end of the bed to the other, there was the fear that the seven-month old baby, George Richard, might be striken, too. It was an extremely emotional time for us. I recall Papa choking back the sobs as he called Mr. Cross on the house telephone and told him the furnace could be dampened off. Mr. Cross's sobs resounded over that phone wire as Papa hung up. He and Bobby loved each other. Bobby rode with Mr. Cross when he went to the old market house each Wednesday and Saturday morning. The old Reo truck had no roof on it and it was quite a sight to see the little blond boy standing up beside his friend "Twoss" as they rode to market.

President John W. Long (L) and Congressman Robert Rich, chairman of the Lycoming College Board of Trustees, at the dedication ceremony for the library (now Long Hall), October 20, 1951.

Besides Old Main, Bradley Hall and the Angel Factory, there was a service building which housed a bakery on the first floor and worker's rooms on the second and third -(female on second, and male on the third). It was positioned at the rear of the main building and in front of the big, red brick barn. Dr. Benjamin Conner had a horse named Dan and the stall was in that barn. The second floor had a tiny bowling alley and lots of room for hay. We climbed up on the roof of the bowling alley and jumped into the hay feeling we had found complete happiness. We rode on Dan when he was not mowing the grass on the athletic field or otherwise kept busy. He must have been a trained riding horse because we sometimes touched his shoulders or ribs at certain spots and his pace changed, much to our delight.

I recall the people who helped with meals, cleaning and maintenance: Miss Dyer, Miss Mary, Mrs. Martin, John Ulmer, Bill Bateman, the laundry workers and our dear old "Bakey" Sutton. His "Dutch Bread" loaf, baked only on Saturday morning, was eagerly awaited with butter ready and mouths watering. The ice cream he mixed on Saturday afternoon had us ready and waiting to lick the paddle. He made caramel ice cream so often, I can't touch it to this day!

When Papa was stern he was very stern, and when he was pleased about something we did, he also let us know that in his quiet way. Many times we found out we have been observed when we thought it was impossible, and we had to grow up somewhat before we realized the power of gossip and the speed with which our actions were observed and tales carried directly to the top! We learned quickly that we were to be respectful to all elders. It could be sorted out later as to which ones we could like or dislike, and we kept that to our own generation. If we felt it was important that Papa should hear from us about something that seemed unfair or someone who didn't perform as we thought they should, we had to have proof before our story was even considered. Papa expected loyalty from all of us. Teachers or workers who did not show that loyalty had to have a very good reason for their actions or they soon found they needed another job. They didn't have to be "yes-men" but had to show that the school rules and ideals meant something to them. It must have been difficult for a comparatively young man to take charge of so many people and things and try to get along with the Board of Directors, the Central Pennsylvania Conference of the Methodist Church members, the Faculty, the Ministerial Association in town, the newspaper people (who were really picturing the school in an affirmative way most of the time), and his own family.

Memories of Papa abound - my first glimpse of cellophane was on his hand. Curled up, we demanded that he make it "work" and were as delighted with the results as he was with our reactions. His seldom-taken trips to go hunting and fishing taught us to eat wild life and enjoy it, spitting out pellets, or bones. Our rides into the countryside or to the top of the hills to see the beautiful scenery surrounding the area gave me the love I still have for driving and viewing the mountains and valleys. Papa would take us for a drive on Sunday afternoon quite often. We especially looked forward to the drive past the tombs with the iron doors while listening to the story of burials with a way of opening the door, in case, by accident, the person was buried alive. Papa would tell us to watch carefully and maybe the doors would open. We would screech and holler to go past quickly instead of slowly. Such fun!

Faculty meetings were held regularly in the formal parlors on the second floor between the "President Apartments" and the offices. With just a set of glass doors closing it off, the noise during the meeting easily reached our home. Especially loud childhood arguments erupting at that time would bring Papa home with fire figuratively shooting from his eyes. Believe me, we kept quiet for the remainder of the meeting, and then some!

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Music And Memories
The Lycoming Choir In Spain

By: Christle D. Rushoe '87

Editor's Note: Christle Rushoe '87 was a member of the Lycoming College Choir, which toured Spain earlier this year. Her diary captures the impressions and flavor of music and memories in Spain.

Sunday, May 10: Well, here we are, back at Lycoming to rehearse for our final concert in the United States. After rehearsal, the college served a buffet to both choir members and area alumni, in Pennington Lounge. The concert was terrific—we sang the Benediction while standing around the chapel holding hands—talk about chills running up your spine! No one got much sleep that night.

Monday, May 11: This is it! We left Williamsport around 12:30 p.m. after having the Long Hall staff give us a sendoff. Today should really have been uneventful, right—just a bus ride to JFK to board the plane. Wrong!! To begin with, the bus overheated three times on the way, and then when we got there, we found out that most of our programs had been misplaced. If that wasn't bad enough, our plane didn't take off until three hours after scheduled departure because they had to wait for a cockpit part to come in from Chicago.

Tuesday, May 12: Somewhere over the ocean, the days changed. I watched the sun rise. Beautiful. In just a few hours we landed in Madrid. There we exchanged dollars for pesetas and met Juan, our guide. He had no idea that our plane had been delayed. He had to wait in the airport for four hours. A charter bus took us to the Hotel Centro Norte, where we would stay for the next four nights. We took in our first meal in Spain (an outside cafe, no less!) and then returned to the hotel either to catch up on our sleep or to check out the Spanish night life.

> *"Somewhere over the ocean, the days changed. I watched the sun rise. Beautiful."*

Wednesday, May 13: Started off the day with a continental breakfast and our first taste for how laid-back the Spanish are. Juan was late! When he arrived, he took us to the *Prado* (the national art museum) via the subway. We spent two hours at the museum, then worked up an appetite for lunch by walking through the beautiful back streets of Madrid to a little out-of-the-way restaurant. There we had our first taste of *paella,* a Spanish rice dish that is nothing like our "Spanish rice." The rest of the day was spent sightseeing in Madrid or shopping in the little stores of the *Plaza Mayor.* We were supposed to give a concert in this plaza; however, there was a rock concert there, so we changed venues to the middle of the shopping district. Our first concert in Spain, and already the people are very receptive. Off to dinner at the oldest restaurant. I had *calamares*—fried squid! I absolutely fell in love with them!!

Skyline of Toledo, Spain.

Thursday, May 14: We made a day trip to Toledo, which is famous for its steel, El Greco, Don Quixote and Damascene. Most of the day was spent sightseeing and shopping. We had another open air concert in the *Plaza Zocodover,* but not before we got a chance to sing *Vere Languores* and the Benediction inside the Cathedral—what an experience! While looking for a place to eat dinner, we met Fred and Pat Thayer. They promptly introduced us to *tapas*—kind of like hors d'oeuvres, but quite filling.

Friday, May 15: Another day trip, this time to Segovia. In the middle of town stands an ancient Roman aqueduct that still carries water—very impressive. Unfortunately, also standing in the middle of town were a bunch of gypsies selling tablecloths. They can spot tourists from a mile away. The most fun for me was talking them down in price from approximately $24 dollars for my tablecloth to about $8. Our first formal concert was to be in the *Alcazar,* which used to be a summer palace for royalty. We spent part of the day touring this palace. Some of the more daring of our group even climbed the 152 steps of the winding staircase to the top of the fortress and found a spectacular view. As we changed into our tuxes and gowns in preparation for the concert that night, we found it hard to believe that the floor we were standing on and the furniture we had laid our other clothes on were centuries older than the United States itself! Our concert was well attended and received; the audience even applauded after our announcements—I guess they couldn't believe that we could actually say them in Spanish! Our bus driver, Adolfo, was not only *muy guapo,* (very handsome) but also an incredible driver.

(Continued on page 8)

Music and Memories *(Continued from page 7)*
Imagine driving a bus through an archway that is only centimeters wider than the bus itself. Everyone was famished by the time we got back to Madrid, so many of us went to "Burger Snoopy" and experienced a Spanish hamburger (it really is an experience).

Saturday, May 16: We left Madrid and headed toward Andujar, our stopover before Cordoba. Cordoba was only an hour away, so shortly after checking into the hotel, many of us piled back into the bus and went to this city to have dinner. Fred and Pat introduced us to *El Churrasco*, a very fine restaurant where one can get the world's best pork tenderloin and gazpacho. Unfortunately, we had to wait until 9:00 for the restaurant to open. Our spirits were further dampened by the first rain since our arrival. However, we found a way to keep dry by shopping for souvenirs. The food was delicious and well worth the wait.

Sunday, May 17: We left Andujar and headed toward Cordoba. This was a special place for us, especially for Fred and Pat, who lived here for 10 months while Fred was on sabbatical. Sightseeing, relaxing, seeking out interesting shops and restaurants became the order of the day. By the time the evening ended, I had injured my leg on a nail hidden from view at one of the sites and Laura's passport was stolen by two men on motorcycles. It was kind of an eventful day all the way around.

Monday, May 18: At 1:30, we left for the *Meson Bandolero* for some more Spanish cuisine. Our concert that night was in the conservatory where Fred worked. The concert was one of our best. It was kind of unusual because we got to meet the arranger of one of our songs, Antonio Sanchez. Quite an experience. After the concert, the youth orchestra from the conservatory threw a *copa*, or reception, for us. You've never seen so much food or drink in your life!

Tuesday, May 19: On to Sevilla, home of the world's third largest cathedral. Unfortunately, most of the choir was bordering on exhaustion by this time, so many of us didn't have enough energy to go sightseeing. Our hotel was very Spanish. All the rooms open up into an open stairwell. One could look down and see who was checking into the hotel without actually having to go down to the lobby. Today was the first day in a long string of many more days when Fred, Bill and Laura tried to get Laura's stolen passport replaced—not an easy task. We finally got to see a live bullfight; live, that is, from Madrid and on the TV in the hotel lobby (the next best thing to being there?). I'm not quite sure why we all watched it for so long knowing that we had to eat dinner in a few minutes.

> *"Our concert was well attended and received; the audience even applauded after our announcements . . . we could actually say them in Spanish!"*

Wednesday, May 20: We left Sevilla for Ronda, and headed over a scenic mountain road that was barely wide enough for one car, let alone a bus. Bullfighting originated in Ronda about 202 years ago. The Ronda bull ring contains a museum filled with memorabilia from the beginning of the sport. In the town, we saw posters advertising our concerts, and each had a picture. However, it wasn't a picture of us; it was a picture of some other university choir. Interesting. The church in which we were to have our concert was made of stone and had a high vaulted ceiling. Acoustically, this caused the tones that we sang to ring for 5 or 6 seconds after we sang them. It's an incredible experience to hear what you have just sung come back to you. During the rehearsal, Pat almost got picked up by some man in the church, but she finally got rid of him and decided to sit up front from then on. We left for the resort town of Marbella right after the concert. We travelled another mountain road to the sea, the *Costa del Sol* on the Mediterranean. It took us awhile to find our hotel, and by the time we did, Adolfo had gotten us into a spot where he needed help. The guys in the choir obliged him by getting off the bus and moving a car onto the sidewalk so that Adolfo could turn a corner. That did the trick. A few of us tried Spanish pizza for dinner; almost as interesting as a hamburger is over there.

> *". . . worked up an appetite for lunch by walking through the beautiful back streets of Madrid . . . we had our first taste of* paella, *a Spanish rice dish that is nothing like our 'Spanish rice'."*

Thursday, May 21: We left Marbella and headed for the Washington Irving Hotel in Granada. Our hotel was about a block away from the Alhambra, formerly a Moorish stronghold. After lunch in the hotel's restaurant, we were free to tour the many buildings of the Alhambra. We then went to the church to rehearse and change for the concert. The sanctuary here was absolutely incredible—everything was gold leaf on a green background with about a hundred candles to illuminate it. It was an SRO crowd, and amazingly enough, this concert was the best one yet.

Friday, May 22: Pat and Fred forgot to bring along an alarm clock, so we took turns making sure they were awake on time. Today, it was my turn. Usually Fred is a fine tenor, but he is definitely a bass in the morning! We left Granada early in anticipation of hitting the beach when we got back to Marbella. However, Juan decided to take us over another winding mountain road. Don't ever try to play cards on a road like this: it's almost impossible. Well, it was overcast by the time we got to Marbella, so the beach was out. At lunch, we met Michael Reckling, coordinator of our concert in Marbella, and the man who was commissioned to have

(Continued on page 13)

Doer's Profile

Morris F. Good

Class Year: 1950
Home: Williamsport, Pennsylvania
Age: 65
Profession: Postmaster, United States Post Office, Williamsport, Pennsylvania
Hobbies: Being with family, church and charitable activities
Latest Accomplishment: Overseeing several changes during 23 years as Postmaster and controlling what is now an $11 million business with 219 employees.
Why I Do What I Do: "I enjoy dealing with the public, the U.S. Postal Service and the employees. This job allows me to spend time with my family and has allowed us to live decently. I have been able to put my wife and two children through college because of my job."
Profile: Family man to the highest extent. Enjoys dealing with all sorts of people.
Lycoming Recollection: "Working extremely hard and enjoying Howard Hinkleman's accounting classes and Helen Weidman's history and political science courses. I worked at the same time I went to Lycoming, so I can always remember studying night and day while working very hard. When I first started at Lycoming in 1947, the school was still known as Dickinson Seminary, but I graduated with the first full class of Lycoming College students in 1950."
Lycoming Experience: "I recall having to take humanity courses like Walter McIver's music appreciation that exposed me to things I wouldn't have realized on my own. All the courses from my accounting classes to distribution courses helped me in law school and continue to have an impact on me today."

The Lycoming-NIH Connection *(Continued from page 3)*

The situations Buriak had observed during his senior year of high school held true once he entered Lycoming. He finds that the professors in biology and chemistry genuinely care for their students and are willing to strive for additional knowledge. "The science faculty are in and out during the evenings and are readily available to help with research projects even if the student is working late at night."

Buriak's interest in the sciences isn't something that developed overnight. "I've always been interested in the sciences. In high school, I became involved with the doctors who treated injured athletic team members. This prompted me to make an early decision to explore medicine as a career." He feels that being encouraged by the Lycoming faculty to become involved in the research at NIH is some of the best advice he has ever received. "This experience has shown me the complexities of getting a drug approved by employing good manufacturing procedures, clinical trials, and quality-control testing."

The summer was filled with excitement and challenges. Dan Buriak met those challenges, supported by the educational preparation he is receiving at Lycoming. He is confident that his biology background will provide the foundation needed to build a career in medicine or a related field. And the NIH project? The research on the antibodies continues and occasionally Buriak travels to Washington to further explore the mystery behind the decreasing potency.

Molly Sue Wentz, a 1985 graduate of Lycoming College, is assistant director of public relations at her alma mater.

FDA Biologist *(Continued from page 3)*

single page to more than 10,000 pages. "We review the manufacturer's test data for each lot that they manufacture and distribute in the United States." Travel is necessary for the inspection of the licensed companies that are in the United States and overseas. The plants are inspected for good manufacturing practices. Preston continues, "We review their product manufacturing processes and toxicology data, and inspect the establishment, water and ventilation systems, validation techniques, and how each test is performed." Usually Office of Biologics inspectors make two or three trips a year. The inspectors travel alone or in groups, mostly pairs, and review the entire plant. According to Preston, "There is a lot of preparation before going out because it's necessary to know the detailed procedures used in manufacturing the products." Follow-up inspection reports are required and reviewed prior to recommending approval of new products.

With the addition of computers into Preston's office, the regulatory work has gotten a little easier to track. "Testing information is maintained on a computer database for more rapid and efficient retrieval. Computerization of laboratory equipment makes collecting and analyzing samples faster and more accurate."

Sue Preston regards the Lycoming experience as fundamental training for the job she currently holds. The biology and chemistry professors nurtured the desire to perform biomedical research through a high-quality laboratory experience and sound scientific [illegible]ing. Extending these ideals has enabled Sue Preston to make a valuable contribution as a biologist at the FDA.

—Molly Sue Wentz

I Remember Papa *(Continued from page 6)*

Once in a while there would be popcorn-making times, with Papa presiding over the stove. Puffed rice rolled in a cooked syrup was my favorite of his culinary efforts. I still can't make that like he did. We usually had a cook during the school year, or when needed in the summer. Mrs. Cross was there the longest time. The angel food cakes she baked on Saturday for Sunday supper were a high point, especially if we had helped beat the whites of eggs.

Seated (from left to right): George R. Long '39, Dorothy Long Spotts '32, Olive Long Gould '29 and '31, Jean Long Dunkleberger '47, Gladys Long Fraser '27. Standing (from left to right): Helen Ann Long, Mrs. George R. Long, Elaine Dunkleberger, William H. Gould '29 (deceased), Lynda McKay Browne, Christie Dunkleberger Aldinger, Betsy McKay Commons '54. Absent when photo was taken: Henry Long and family.

Sunday dinner at noon was eaten in the Seminary dining room, as was Thursday night's dinner - that was cook's day off. At times one of us would eat there with a friend, but we soon learned we wouldn't be happy if we chose a Sunday night's supper when bananas with peanut butter broiled on top were served on a bed of lettuce. Ugh!

Papa said grace before the meal. If any of us were late, we waited until that was spoken, then had to go down to the center of the room to take a seat at our table. Scoldings hadn't done any good; someone was almost always late and that embarrassed Papa. Holiday time would find a smaller group eating there - boys from Cuba, a student or two who could not get home, and several faculty members who lived too far away. Miss Dewey, a violin teacher, was one of these. Mamma always had pretty name cards and a piece of candy wrapped in foil. They were special times.

There were instances when students came early to school. We learned quickly that they were a special project for the same age child in our family, so homesickness would not be a problem. One pretty girl came from Australia right after her mother died and her father had to try to find a relative who could care for her. She stayed only a few weeks, but I still wonder how she made out in her life.

Rules were strict, particularly for the girls. Once, when a pep rally was not allowed, Louise, a preacher's daughter from Clearfield, led a group of girls who covered themselves with sheets so they couldn't be recognized. They marched down on the front campus and started a rally. Papa's feet landed on the floor, then stalked toward the front door, when he realized what was going on. Those sheets came off in a hurry and all the girls were put "on campus" for their disobedience. I hid, watching it all, yet admiring the girls for their daring.

On the same order was the time years later when a famous boxing match was to be held and the only radio was down at the corner store. About 9 p.m. a gang of boys ran past the watchman and on down to the store to hear the thrilling Gene Tunney/Jack Dempsey fight. When they came back up guess who was waiting? Dean Skeath and Dr. Long!

Those young men must have been a lot older before they forgot the biting lecture and the shame of the "on-campus" punishment. I just had to sneak through the dark hall to watch and listen outside the chapel door, and I hoped I wouldn't get caught and receive a lecture just for me.

One time John and I weren't caught but we shivered gleefully while we were doing a fun thing. While quite young, we were given a nest of tiny mice dug up from the changing of tennis courts from one spot to another. Delighted, we tried to keep them all but succeeded in keeping only one alive for a day or two. We decided it would be fun to tie a string to the tail of the mouse. That night we sneaked up the stairs almost to the top of the third floor steps and let out the long string. The mouse headed right into the room and in front of the steps, across the hall. It was great to hear the screeches that let loose. As the preceptress, probably Miss Taylor, came hurrying from her room, we quickly pulled the string and the mouse back to us and raced down to the steps going to the Annex where we did the same thing, with the same results. We didn't stay around to see how quickly help could come from one set of screeches to the other, but hurried back home and quietly enjoyed our act.

As we grew older, we saw a number of changes in the physical layout of both the campus and the buildings. A vigorous protest would be answered by an explanation if Papa felt we could understand, but under no circumstances would there be any changes made in his plans. Everything important had to be approved by the Board of Directors, of course, and some things also went for approval to the Central Pennsylvania Conference of the Methodist Church. In all areas, the understanding of the people Papa considered to be his special friends and biggest backers in planning the future of the Seminary were the Honorable M. B. Rich and his son, the Honorable Robert F. Rich and their families. Without their approval, active assistance and monetary backing, Lycoming College probably would never have arrived at the present scholastic level. One of the items which was of prime importance was the hiring of teachers who would continue to raise the educational standards of the school. I remember many discussions overheard at home of qualifications and personalities of people brought in for interviews or interviewed in their own places. The faculty had encouragement to go forward in their field. I know of at least one person who was given half of his time each week to work toward a degree. However one professor proceeded to accept another position just a couple weeks before school opened. It was to the man's credit to better himself, but was quite a disappointment to the school and Papa's yearly plans.

If we missed a learning experience, it was pointed out by Papa, and we were expected to be a part of as many as possible. I remember that the tiling of the swimming pool was especially interesting because it was being done by a talented workman who seemed to be practically alone in his ability. He was very nice to us as we watched him lay the tiny pieces by hand, and we asked many questions.

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Microbiologists Probe The Cause Of Cancer

By: Dr. Jack Diehl

Biology is the study of life. Microbiologists study those forms of life that are too small to be seen with the unaided eye. This includes organisms like bacteria and viruses. The years 1875 to 1900 are often described as the golden years of microbiology because it was during this period that many disease-causing bacteria were discovered—diseases such as tuberculosis, tetanus, pneumonia, diphtheria and the bubonic plague. In the early 1900's, vaccines were developed and chemotherapeutic agents were discovered. In 1928, Flemming discovered the antibiotic effect of penicillin. Later Flory and Chain isolated penicillin and its usefulness in the treatment of infectious disease was demonstrated, thus giving birth to the antibiotic industry which ultimately led to the conquest of most bacterial diseases. Following this conquest, some people naively believed that the science of microbiology had seen its best days. However, during the past 20 years, the microbiologist has generated tools that have already started to revolutionize all of biology.

The revolution started in 1970 when microbiologist Hamilton Smith isolated, from a bacterium, an enzyme that cut DNA (the genetic material of practically all forms of life) at specific locations. Many other enzymes of this nature, termed restriction enzymes, have since been isolated from a variety of different microorganisms and have also been demonstrated to cut DNA at different locations. Stanley Cohen at Stanford University demonstrated that these enzymes could be used to cut out and remove the genes from one form of life and the genes so removed could then be transplanted into another organism. This demonstration gave birth to recombinant DNA (genetic engineering) techniques which initiated the revolution that now impacts on all areas of biology.

One area where this new technology is being widely used is in the area of cancer research. The question has long been asked, can the cancerous cell be understood? In the last 15 years microbiologists have begun to elucidate the sequence of events that induce cancerous growth. This enlightenment has resulted from the study of viruses that cause cancer and from the use of the gene splicing techniques mentioned above.

The concept that viruses can cause cancer is not new. In 1910, Payton Rous, a microbiologist, conducted an experiment that led him to conclude that a sarcoma, a kind of cancer in chickens, is caused by a virus. In 1910, the study of viruses was in its infancy. Thus, the scientific community did not fully realize the importance of this discovery. Hence, Rous's findings were not greeted with enthusiasm. Years later, a major technological breakthrough in the study of viruses was achieved when scientists learned to grow animal cells in glass dishes in the laboratory. Since viruses can reproduce only inside a living cell, it now became possible to study viruses and the cells that they infect, in test tubes, as opposed to studying them in whole animals. At about the same time that these cell culture techniques were being developed, the electron microscope was also being developed. Viruses, too small to be seen under a glass lens microscope, could be viewed under the electron microscope. Using the cell culture techniques, the Rous Sarcoma Virus was grown in the laboratory. The confirmation of Rous's 1910 conclusion that chicken sarcoma is caused by a virus was deemed so important that the Nobel Committee awarded Peyton Rous the 1966 Nobel Prize 56 years after his original discovery!

In 1970, microbiologists studying the Rous Sarcoma Virus (RSV) found that a virus with a mutation, altered DNA, had lost its ability to cause cancer but retained its ability to reproduce. This finding implied that there is a sequence of DNA (a gene or genes) within the virus that causes cancer and that, within this virus, the genes required for virus reproduction are separate from the DNA sequence that causes cancer. This observation indicated that the cancer causing sequence is not even needed by the virus.

The belief that genes may be involved in cancer is very old. J. Michael Bishop points out that in 1866 Paul Broca sketched the pedigree of his wife's family and discerned a hereditary diathesis to cancer. This insight attracted little attention in Broca's time (indeed, this child of Broca's brain went unmentioned by Carl Sagan in our time). However, it must be

". . . Can the cancerous cell be understood? In the last 15 years microbiologists have begun to elucidate the sequence of events that induce cancerous growth. This enlightenment has resulted from the gene splicing techniques . . ."

remembered that it was also in 1866 that Gregor Mendel published "Versuche uber Pflanzen Hybriden", a work which later proved to be the foundation of modern genetics but, like Broca's sketches, was also ignored until this century. During the first half of this century geneticists, by studying families and constructing pedigrees, have demonstrated the hereditary effects of a number of cancers which implied that genes are involved. In 1970 it appeared that microbiologists may have had at their finger tips an actual cancer causing gene contained in a virus in a test tube.

In the past few years the techniques of genetic engineering have been used to isolate genes and to study how they cause cancer. Virus DNA can be cut into fragments with the restriction enzymes and the fragments grown in quantity in bacteria and then reisolated and put into animal cells that are grown in glass dishes. One then looks to see which DNA (genes) causes transformation to a cancer cell. Analysis of the Rous Sarcoma Virus genes by this technique revealed that a single gene is capable of transforming cells into cancerous cells. This gene was termed an oncogene, (*oncos* from Greek means tumor). Further studies revealed that the RSV oncogene causes the synthesis of a cellular enzyme. The implication is that one gene directs the synthesis of one enzyme and, apparently, the catalytic action of this enzyme can bring about the changes to a cancerous cell.

How can this enzyme convert a cell to cancerous growth? To answer this question the enzyme was isolated and was shown to catalyze the addition of phosphate groups to other cellular proteins. For about 30 years, it was known that the addition or removal of phosphate groups to or from cellular proteins is a primary mechanism whereby the metabolic activities of growing cells are regulated. Thus it appeared that the enzyme specified by the RSV oncogene, in essence, robbed the cell of its ability to regulate cell division and, consequently, the cell was constantly dividing—the cancerous state!

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Microbiologists Probe The Cause Of Cancer

(Continued from page 11)

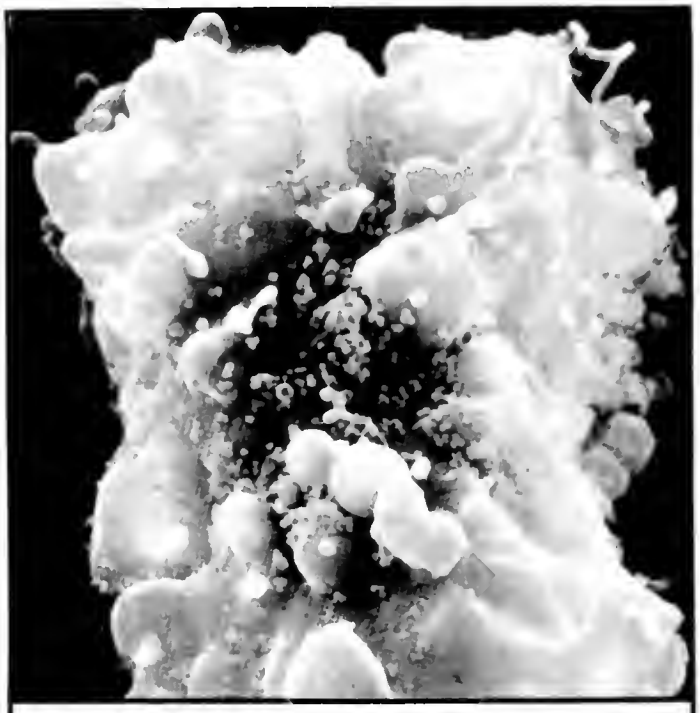
Realizing that a viral oncogene could cause cancer triggered a search for oncogenes in cancer cells surgically removed from cancer patients. DNA, the collection of genes, was extracted from cells of a spontaneous, not caused by virus, human bladder cancer. The DNA from the cancer cells was cut into fragments with restriction enzymes and the fragments were separated and put separately into cells growing in laboratory dishes. Some of the cells were transformed into cancer cells and it was later found that, as in the RSV, a single DNA fragment could alone bring about the transformation to the cancerous state; therefore, this fragment contained the human bladder cancer oncogene. Since this cancer is not caused by a virus the question of where the oncogene came from was raised.

One hypothesis concerning the origin of oncogenes proposes that they are, in fact, cellular genes that have been slightly altered, possibly by spontaneous mutation (i.e. the cell makes a mistake during DNA replication) or the action of some carcinogenic agent, alterations inducted by irradiation or chemical carcinogens. Two separate experiments were done to test this hypothesis. First, the bladder cancer oncogene was used to make duplicate oncogenes, all of which were made to contain radioactivity. A characteristic of DNA is that it will

> *"The cause of cancer should be well defined by the end of this century. Is this the dawn of a new golden age of microbiology?"*

bind tightly to identical or very similar DNA under suitable conditions. Using the radioactive oncogenes from bladder cancer and conditions conducive to DNA binding, the genes from normal bladder cells were exposed to the radioactively labeled bladder oncogenes. The result of this experiment was astounding. The radioactivity, hence the oncogene, was found to be bound to the same genes in all normal cells. Further analysis revealed that the gene from the normal bladder cell differed from the bladder oncogene only at one point. This supported the hypothesis that cancer genes are in fact normal cellular genes that have been slightly altered. The second experiment involved The Rous Sarcoma Viral oncogene which was also radioactively labeled and used to probe the genes of normal chicken cells. The result was the same, normal cells contain a gene that is very similar to the oncogene. This study was carried further and the RSV oncogene was used to probe the genes from other animals and humans. In every case a gene that is very similar to the RSV oncogene was found. This implied that the viral oncogene may be nothing more than a celullar gene which has been altered and acquired by the virus. If true, it raises the question concerning how the virus attained a cellular gene.

The Rous Sarcoma Virus belongs to a group of viruses called the retroviruses. Their genetic material is RNA and not DNA. However, when they infect a host cell they immediately transcribe their RNA into DNA, a process that is the opposite of the mechanism used by all other known forms of life, in which the normal flow of genetic information is from DNA to RNA, hence the name retrovirus from the Latin retro meaning backward. When retroviruses replicate in the host cell their DNA becomes integrated with host cell DNA so that the viral genes are reproduced as the host genes are being reproduced. When the retrovirus comes out of the host cell it can carry within it some of the host cell DNA. In this process, the DNA may become altered, creating an altered gene. Thus it appears that retroviral oncogenes are merely genetic material from the



Representation of a retro virus attacking a host cell.

host cell that has been slightly altered and which is carried by the virus.

Employing the same techniques that were used in the study of the Rous Sarcoma Virus, other retroviruses have had their genes examined for the presence of oncogenes. These efforts have been fruitful, revealing approximately 35 different oncogenes. Some of these more recently found oncogenes specify enzymes that phosphorylate (phosphorus is one of several switching mechanisms that turns cells on and off) cellular proteins just as does the RSV oncogene product. Another directs the synthesis of a growth factor, cellular receptors for growth factors and proteins that bind to DNA thereby directly affecting genetic expression. All of the recently discovered oncogenes have cellular relatives in all animals tested. This finding raises the question of the function of the cellular relative of the oncogene, a function that apparently is very important to life since they are found in almost all organisms tested. This includes organisms as diverse as yeast, the fruit fly (Drosophila), and humans. The fact that they have survived long periods of evolution without significant changes is also testimony to the importance of these genes to the forms of life that possess them.

The normal cellular genes that are the apparent precursors of oncogenes are called proto-oncogenes and are a part of the collection of genes that are required for normal growth and development. This fact was confirmed when it was shown by two different methods that the RSV proto-oncogene also specifies an enzyme that adds phosphates to cellular proteins. The only apparent difference between the normal enzyme and the enzyme in the cancer cell is that the one in the cancer cell is slightly altered due to the slightly altered oncogene that specified its production. The altered enzyme is not subject to the normal cellular regulatory mechanisms and, therefore, carries out its catalytic action in an unregulated manner. This results in uncontrolled cell division or the cancerous state.

Generally speaking, the other known proto-oncogenes exhibit this same type of pattern. They have survived long periods of evolution, as evidenced by being found in many different and diverse species. They are active and essential to the well being of the species in which they reside, possibly functioning in the regulation of normal growth and development.

From fertilization to adulthood, one can see that many changes in normal growth patterns occur. At fertilization, the sperm unites with the egg, resulting in a single cell with a finite and defined number of genes. The fertilized egg, responding to hormones and growth factors, starts to divide at a rapid rate with each new daughter cell getting a copy of the genetic material that was sequestered at fertilization. Some of these cells develop into nerve cells, others become muscles and some develop into body tissue as different genes are activated. Division of these differentiated cells continue after birth and then at adulthood most of these cells receive a signal that cell division (growth) must stop. This signal may in fact be the removal or elimination of a growth factor. There is a growing body of evidence to support the concept that proto-oncogenes are important in guiding and regulating growth and differentiation. One piece of evidence was provided by the 1986 Nobel prize winner, Stanley Cohen of Vanderbilt University (not related to the Stanley Cohen mentioned elsewhere in this article). Cohen discovered a growth hormone which he named epidermal growth factor (EGF). He discovered that some, but not all, cells have a receptor for this growth factor. When exposed to this growth factor the receptors are activated and cause phosphorylation of cellular proteins, in much the same fashion as that described for the RSV oncogene and proto-oncogene, and cell division occurs. One oncogene directs the synthesis of an altered receptor for EGF. This altered receptor is constantly active, even when it is not being exposed to the growth factor. The result is that the cell is in a constant state of cell division.

Research has shown that a single oncogene is in the DNA of tumors from different tissues (lymphoma, neuroblastoma, colon carsinoma and several different sarcomas). This indicates that the same gene in different tissues can be converted to an oncogene, giving rise in each to a different kind of tumor but by a common mechanism. Apparently there are a small number of mechanisms that can give rise to a large number of different kinds of tumors.

At one time the many different kinds of cancer made it appear that cancer was hundreds of different kinds of diseases. The work of microbiologists with viral oncogenes has shown that the cancer situation may not be that complex. In fact, all cancers may arise by a few common mechanisms involving the conversion of one or several of the truly vital proto-oncogenes into oncogenes by mutation, chromosomal rearrangement or retroviral infection. An exception to this seems to be retinoblastoma, a rare tumor that affects the retina of one or both eyes. The retinoblastoma gene is recessive while all other oncogenes are dominant meaning that only one defective gene on the paired homologous chromosomes is all that is necessary to cause cancer. Altered genes specify an altered gene product which instructs the cell to divide uncontrollably even in the presence of the good gene product. Since this recessive gene only causes cancer if both genes are altered (if one is altered and the other is good, then cancer will not occur), the interpretation is that these genes may be coding for products that tell the cell to stop dividing. When both copies are bad (altered) the stop message is not made and the cell divides uncontrollably.

Viruses have proven to be powerful tools in the hands of microbiologists who have pointed the way to an understanding of the cause of cancer. Ten years ago the disease seemed incomprehensible. Today, some questions remain unanswered, but powerful tools developed by the microbiologists will insure rapid advances in the coming years. The cause of cancer should be well defined by the end of this century. Is this the dawn of a new golden age of microbiology?

Jack Diehl is associate professor of biology at Lycoming College.

Music and Memories *(Continued from page 8)*

Spain's largest pipe organ built in the church where we performed. That really was an incredible instrument. Michael played his own composition for us on it, and by the time he had finished the song, we had heard all the pipes played. Considering that there were hundreds of pipes to be heard and all 60 stops were pulled out, this was no small feat.

Saturday, May 23: Another overcast day in Marbella; so we spent it shopping or simply lounging around. Our concert was fairly late at night, so there wasn't a big crowd. Michael played the organ again as our farewell - the same composition, but it was still incredible. We signed our names to the "guest organist" book. The Lycoming Choir is now immortalized forever. Pat asked me and some others whether we were ready to go home. The answer was a sorrowful "No."

Sunday, May 24: Finally, a sunny day in Marbella! The majority of the choir hit the beach bright and early, and many of us had to contend with sunburn that night when putting on tuxes or gowns. Our concert was in the Malaga Conservatory. We left Marbella in the early afternoon so that we would arrive on time. I think we put our heart and soul into this final concert in Spain, because this one was the best. After the concert, Juan threw us a champagne toast and Adolfo spoke his first words of English - "Thank you." We hurried to get dressed - we had a plane to catch that would take us to Madrid. We got to the airport on time, and said goodbye to Adolfo. Malaga to Madrid is a very short trip, so we were there in no time. We were taken to a hotel close to the airport, and a group of us walked into Madrid to have a light supper - we stretched this one out to 4 o'clock in the morning!

Monday, May 25: Our last day in Spain. We said goodbye to Juan, and for some of us, that was a very painful thing to do. Our plane took off on time and we arrived at JFK earlier than expected. Wouldn't you know it. When you want to prolong your trip, the plane is never late! During the flight, we shared a bottle of champagne, wrapped in a cloth napkin held together with toy wings. Those were for Pat - she earned them. It was cold in New York City and it was a long, silent ride back home. We had another welcoming committee when we got back to Lycoming. After a few final hugs, our trip was over. I'll always cherish the memories.

On behalf of the Lycoming Tour Choir, I would like to express appreciation to the many, many supporters who made this trip to Spain a reality. Without your generous support the goal could not have been reached. Now wonderful memories will live on as they are reinforced by photos, diaries, and most importantly strong human bonds.

Fred Thayer

Winter Sports

By: Bill Byham

For those who would rather take their winters indoors than out on the slopes and ice can find solace in knowing that the Lamade Gymnasium heaters will be operating through the long cold spell as Lycoming College presents its winter athletic programs to the public.

With that in mind, it's suggested that one of the "hot tickets" for the winter will be to watch and root on a quintet of Warrior athletic teams who will be performing from mid-November until the last week of February.

Over that time period those "inside winter fans" will be able to catch wrestling, basketball and swimming in one of the finest athletic facilities around Central Pennsylvania.

Budd Whitehill and his wrestling Warriors were the first scheduled starters of the official season with a one day appearance on November 14 at the Binghamton Tourney. Both the Warrior basketball teams opened their seasons along with the swim team on November 21. Dutch Burch's ball club was in Middle Atlantic Conference action at Susquehanna while Kim Rockey's Lady Warriors were in tourney action in Rochester, NY. The male and female swim teams met for a triangular meet with York and Ursinus at Ursinus as Janis Arp opened her second season at the head of the program.

Whitehill is one of the key winter stories. He is the only wrestling coach Lycoming has ever hired and will enter his 31st season needing just four wins to reach the 300 win plateau. With an experienced squad back from a 14-7 dual meet season of last winter, it's assumed that the Warriors will present their head coach his new milestone quite early into the season.

With matmen like Brian Maw (118), Matt Miller (142), Troy Gardner (150), Bryan Neidigh (177) and Mike Gilmore (Hvt.) still in the lineup, Lycoming looks like a contender for the MAC title now held by the Delaware Valley Aggies.

Dutch Burch is a man with a mission for his hoopsters in Lycoming men's basketball. His team came away with a 9-14 overall record last winter and a 7-9 log in the MAC's. With three regulars back, some people moving up and with his new recruits on hand, the 25-year veteran of Lycoming basketball coaching was looking for improvement out of his new team.

"I started the practice time looking for a 10-man team that can play our style of ball. I even picked out a label for them. I intend to call them the Hilltop Ten and go from there," said Burch as he entered his 26th season with a 269-286 Lycoming record.

One of the sure starters for the Hilltop Ten is senior Jay Cleveland. The 6-5 forward, an All-MAC first team selection from last winter, heads into the season with a career 828 points after scoring 450 points on a 19.6 ppg average. Also back as starters from last year are junior guard Jeff Jones (14.1 ppg) and forward Steve Crawford (6.4 ppg). Burch is also looking for team leadership from Carl Arrigale, the third senior on this Warrior roster.

Budd Whitehill

Lady Warrior coach, Kim Rockey, is really excited about her new season. Last year her club played a 5-16 season with only eight players on the roster for most of the season. This winter she has 16 players in uniform and her Indiana style of basketball looks as if it might explode on the scene.

Rockey did not lose any players by graduation last spring so the core of her team from last winter is back. Kristen Friel (14.3), Karen Ramm (11.6) and Lonna Zook (11.3) were the scoring leaders while Colleen McCallus and Jill Rice were there to contribute their multi-talents. During the off season Rockey worked very hard at recruiting and has added several very promising players to the Lady Warrior roster. Included in those new faces are three experienced transfers in Robyn Hannan, Tamera Mnick and Cheryl Ward.

Swim team coach Janis Arp is, and excuse the pun, trying to keep the Warrior swim program afloat. This will be her second year as head of the program and once again her teams will be quite shorthanded.

She will be building her women's team around Jody Haney and Amy Cunniffe, the last two winners of the Mort Rauff Memorial Award (for outstanding contribution to the swimming program at Lycoming). The first week of practice showed some eight women and five men working in the pool in preparation for the new season. If the male swimmers stay together and swim the season it will be a big boost because there was no men's team last winter.

"Our recruiting work is just really beginning," said Arp. "What we need is to survive this season and hope we can locate more kids with a competitive swimming background for our future teams."

Bill Byham is sports information director at Lycoming College

A. Alumni reuniting in Pennington Lounge. **B.** Lisa E. Englund '88 crowns her successor, Susan L. Decker '88, as the 1987 Homecoming Queen. **C.** 1987 Athletic Hall of Fame Inductees: (l-r) Charles Sample '68, Francis D. Miller '79, Kevin McVey '79, Laurie Shea Petrik '80, John Lindemuth '27, and Randall O. Parsons '77. **D.** Class of 1977 - 10th year reunion. **E.** Russell W. Twigg '74, tournament coordinator, watches as several alumni compete in a round of golf. **F.** Class of 1937 - 50th year reunion.


A


C


B

A. A new member of the chemistry department, Dr. Chriss McDonald, assistant professor of chemistry, shares his research with the breakfast group and explains what he will bring to the Lycoming faculty. **B.** Dr. Melvin C. Zimmerman, associate professor of biology, addresses the biology and chemistry alumni at a special breakfast, reaquainting them with the department. **C.** Harold H. Shreckengast, Jr. '50, chairman of the Board of Trustees presents the site for the new Science facility to the Alumni and friends gathered for the dedication. **D.** Alumni Association President, Pat Krauser '68, presents a shovel to President Blumer to be used at the ground breaking scheduled for early next year. **E.** Frederick E. Blumer, president of Lycoming College, talks about the exciting change to the campus and the Academic programs that is about to take place. **F-G.** Dr. David A. Franz, associate professor of Chemistry, quickly moves away from the thermite reaction used to prepare the ground for the mid-winter ground breaking. **H-I.** Everyone marks the official dedication of the site of the new Science facility by releasing balloons which carry the message "Lycoming College Celebrates Life's Changes."


F


G

D

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H

I

Three Alumni Honored

Harold H. Shreckengast, Jr. '50, with President Blumer

The 1987 Outstanding Alumnus Award was presented to Harold H. Shreckengast, Jr. at the Homecoming dinner, Saturday, October 10. A 1950 graduate, Mr. Shreckengast received his degree in accounting.

Following graduation, he joined Price Waterhouse, an international CPA firm, in Philadelphia. In 1963, he was named a general audit partner with overall client responsibilities for various multinational companies including Campbell Soup, Scott Paper and DuPont. Though his professional responsibilities required him to travel extensively, he found time to become involved in many professional and civic activities. A licensed Certified Public Accountant in Pennsylvania, as well as other states, he was elected president of the Pennsylvania Institute of Certified Public Accountants in 1983. Additionally, he served as a member of the Council of the American Institute of Certified Public Accountants, a governing body of a nearly 200,000 member national association. Currently, he serves as a member of the State Board of Accounting in Pennsylvania, appointed by the Governor in 1985.

His commitment to service has extended to his alma mater, as well. In 1972, he was elected to represent the Alumni on the Lycoming College Board of Trustees. He currently holds the position of chairman of the Board of Trustees. In 1984, Lycoming's Accounting Society honored him as the second recipient of the Outstanding Accounting Alumnus Award.

This past June, Mr. Shreckengast retired from his position with Price Waterhouse, but continues to serve his profession, community and *alma mater*.

John W. Montgomery '72, with his wife, Melanie and Dr. Guerra

John W. Montgomery received the 1987 Outstanding Achievement Award. A native of Hughesville, PA, Mr. Montgomery received his degree in political science in 1972. Soon after graduation, he secured a teaching position in the Lewisburg Area School District. He continued his studies at the University of Southern California and in 1978 received his masters degree in international relations. Thus began his career with the Defense Intelligence Agency at the Pentagon.

He received the DIA's Special Achievement Award in 1984. In 1985, the Defense Intelligence Agency presented him with the Award for Meritorious Civilian Service, citing that he was the primary Israel current intelligence analyst in the Defense Intelligence Agency during a period of intense military diplomatic activity which threatened U.S. personnel and interests in the Middle East. His judgments and actions were instrumental in the formulation of key decisions by the National Command Authority, including those relating to the possibility of hostilities against the United States. His in-depth knowledge, professional manner, initiative, and devotion to duty, made him a distinct asset to both the Defense Intelligence Agency and the Department of Defense.

The 1987 Dale V. Bower Service Award was presented to Barry C. Hamilton, class of 1970. After receiving his B.A. degree from Lycoming College in business administration, he continued his education at Drexel University receiving his M.B.A. degree in 1973. In 1983, he received a certificate from the Michigan Graduate School of Bank Management.

Barry C. Hamilton '70, with his wife, Lois, and their son, Rob

His career in the banking industry has taken him from the management trainee level, where he entered the field in 1970, through various levels of responsibility to his current position as vice president manager of the Custom Banking Division of Mellon Bank in Philadelphia, PA.

His concern for higher education and its importance to the young people of our society, has been a driving force in his service to his *alma mater*. Together with his wife, Lois, they opened their home to prospective students in the Philadelphia area. The receptions which they hosted allowed a unique exchange of information between alumnus and would-be student—an experience which benefited those involved, as well as Lycoming College. He has also served as a member of the Alumni Association Executive Board recently as the alumni representative in the Philadelphia area.

The Admissions House

By: Nancy L. Thornton

On Friday, October 23, 1987, Lycoming College proudly dedicated its new admissions center, the Drum House. Located at the northwest corner of the campus (Washington Boulevard and College Place), the renovation of the former Fine Arts I building was made possible through an anonymous gift of $100,000. Refurbishing the building took many months of planning and a year of extensive renovations by a team of college artisans and outside contractors.

The first contact most prospective students and their parents have with Lycoming College is the Admissions office. The original idea, conceived by President Frederick E. Blumer, was to restore this house to an atmosphere that would reflect the historical roots of Lycoming's predecessor institutions. He felt that the first floor should typify the period of the founding of the school in 1812. The atmosphere would provide guests with a feeling for the Christian heritage and a tranquility present during the earliest days of our school.

Although this was a good theme for the Admissions House, the same area also had to serve as a reception room for students and parents, a viewing area for video tape presentations and an information center.

The first floor parlor began to take on an early 1800's atmosphere with oriental rugs, antique tables and chairs, and books placed in the room. The most important book and the focal point of the rooms is an old Parson's Bible, open for display on the reproduction Bible Box.

Craftspeople, armed with ladders, paint, lumber and electrical wiring, and buttressed by skilled artisans from the College maintenance department, set out to create a building atmosphere which would represent past tradition, yet serve as a beacon for Lycoming College in the future.

First, detailed repairs had to be made to the exterior structure, with the condition of the brick being the major concern. In a careful and painstaken process the brick was cleaned, repaired, repointed and sealed.

In addition to the brick work, insulated windows and a fire escape on the east side were installed. (After concluding work on the exterior, attention was focused on preserving the interior architectural details in a simplistic style appropriate to the early 1800's.)

Pine floors were placed on top of the existing oak floors. The pine, obtained from North Carolina, was retrieved from old homes. The wood was remilled, tongue and grooved, then placed in the house on the first floor and in the guest suite on the second floor. Finished with an oil stain, this flooring creates the look of the early 1800's.

After the floor was completed the next project was preserving and enhancing the interior architectural details. The objective again was to maintain the early 19th century look. A detailed cornice was designed to accentuate the height of the ceilings and an 1812 Pennsylvania mantel was duplicated with the addition of dentil work to tie in with the cornice design.

Brass fixtures and hardware were placed in the house and beautiful brass chandeliers were hung in both the parlor and dining area to eliminate the need for modern day lamps.

Despite the enormous complexities of the project, the renovation was completed on schedule, creating a warm environment for prospective students, parents and visitors. The house depicts a story of what we were yesterday and where our tomorrows may take us. It serves as an historic bridge - a legacy from the past beckoning Lycoming College's next generation of students.

Nancy Thornton is a mass communication/public relations major at Lycoming College.

I Remember Papa *(Continued from page 10)*

We were encouraged to take extra classes such as art, music, elocution and sports. Some of the students who had far greater talent in these areas were assisted by the faculty if there wasn't enough money to pay for them. Papa and Mamma saw to it that we did not know who they were - but the students themselves told us in later years how much it meant to them to receive such encouragement at Papa's instigation.

A recent Alumna of the Year gave me a warm feeling when she said she could not have gone on if she had not had Papa's encouragement and the school's monetary assistance at a time when she desperately needed it. Many folks have spoken about his personal kindness and prayerful help at a time of crisis in school.

Papa's farsightedness resulted in the Junior College developing into the four-year college. Each step was taken with the help of many but the back-biting of a few. It was hard to be nice when a new member of the Board of Directors, elected after Papa's death, came up to say how much he had appreciated Papa. We knew that particular person had fought against each change that had been made, but now had joined the finished project with pride.

Papa played football and baseball during his years at Dickinson Seminary College in Carlisle, PA. He was always very interested in all the sports at Dickinson Seminary, the Junior College and Lycoming College. His enthusiasm must have been noticed because the team gave him an "L" for his interest and backing. I still have that letter.

The Class of 1922, at their reunion in 1955, gave an engraved silver bowl to Mamma and Papa. They were very surprised and pleased. It means a lot to me because my mother handed it to me on one of the last days she was able to walk around the house. I spent every weekend with her during most of her last year. We all tried to be with her as much as we could. A wife of one of the faculty told us after her death that she would come to show her sympathy and love and would end up receiving it herself from Mamma.

There are so many memories that could be told but it would end up as a book. Who knows if it could possibly be as interesting to other folks as it would be to our family. Our lives were much influenced by our parents, as with most families and as a "sometimes" rebel, I have found out I wasn't as knowledgeable as I thought.

Summer of '47: Little League glory recalled

By: Ken Ryan

Editor's Note: The following article about Frank Wool '57 appeared in the August 29 edition of The Virginian-Pilot and The Ledger-Star. It is reprinted with permission.

VIRGINIA BEACH — For years Frank Wool of Virginia Beach couldn't have cared less about being a member of the first team to win a Little League World Series.

"Over the years I kind of forgot about it," he said. "I thought, 'Who cares?' "

In 1947, it seems not too many folks cared about the inaugural Little League World Series. The championship drew about 2,500 fans, but outside Williamsport, Pa., the game was just a rumor.

There were no television cameras on hand, no radio play-by-play, and only scant newspaper coverage.

"We thought it was an experiment, something they would try for one year," said Wool, a first baseman on the Maynard (Williamsport, Pa.) Little League team.

In time, as the Little League World Series grew in popularity, Wool began to appreciate his unique place in baseball history.

Today, Wool, 52, smiles and says, "It's absolutely one of the greatest achievements in my life."

Wool will be among the 12 surviving members of the Maynard Little League team (one player is deceased) who will gather in Williamsport today for a 40th aniversary party. The team's two coaches, and two of the three umpires who worked the championship game are also expected to attend.

A banquet, a VIP luncheon and parade are among the events planned. A crowd of 50,000 is expected for the Parade of Champions, which is to precede today's Little League World Series final.

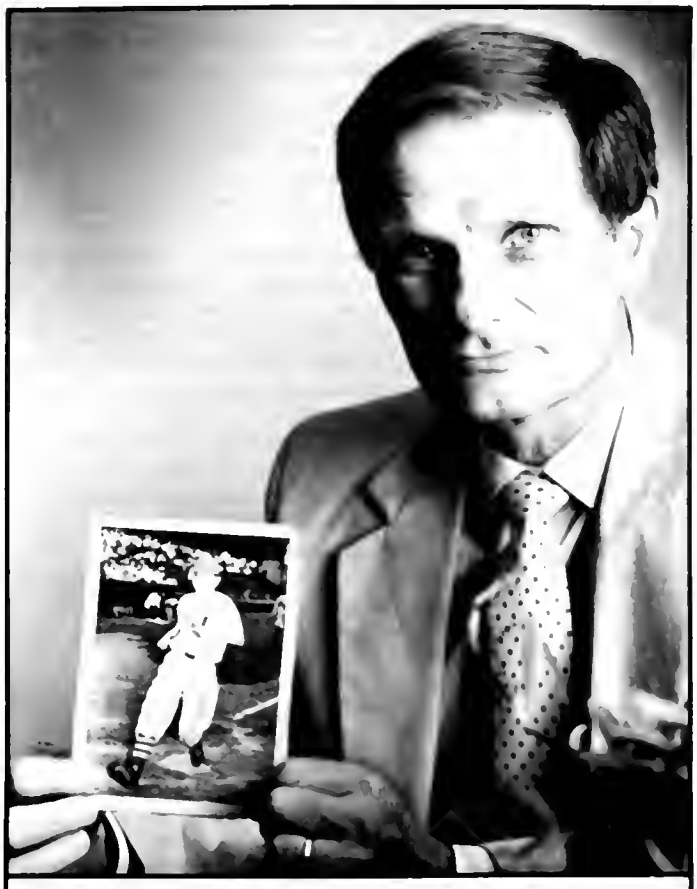
Wool can't wait for the festivities to begin. "I'm bubbling over it," he said. "If I couldn't fly there, I'd walk."

It has been 25 years since Wool has seen any of his former teammates. "It's going to be interesting," he said. "What will they look like? Are they going to be old men? Of course, I'm one of them."

Plans for a reunion began in January when Little League Baseball Incorporated formed a committee to locate the members of the 1947 team. "The fact that they found every one of us and every one was willing to drop everything and go to the reunion come hell or high water is astonishing," Wool said.

Maynard almost didn't reach the Little League championship. In the semifinals against Newberry, Pa., Maynard went 10 innings before winning, 2-1. "We thought that was the turning point," Wool said. "We thought we were home free after that."

Two hours later, Maynard pounded Lock Haven, Pa., 16-7, for the title. According to a box score in the Williamsport Sun, Wool had three hits and scored three runs in the clinching victory.



Frank Wool displays a photo of himself scoring a run during the first Little League World Series in 1947.

The Little League World Series wasn't the international event it is today. There were no foreign entries like there are today. What's more, the Series had a distinct eastern U.S. flavor, as three of the four finalists were from Pennsylvania. The fourth was from New Jersey.

"Not too much (baseball) was going on out West back then," Wool said.

Asked if the players felt any outside pressure to win, either from parents or coaches, Wool said: "Winning wasn't the thing back then, playing was the thing. We were a relaxed bunch, and I think that helped. I don't think we felt a lot of pressure. My experience with Little League has always been positive."

Wool enjoyed success in the years following the Little League World Series, but as a pitcher. "As I grew older, I had trouble hitting the curve," he said.

Wool, though, had some pitches of his own. He compiled a 13-0 record as a senior at St. Joseph High School and was offered a baseball scholarship to Penn State. Wool would have accepted it, but when his father died he decided to stay close to home.

(Continued on page 19)

ON CAMPUS

Brown Receives DAR Medal

Kathleen Brown (L), a senior nursing student from Montclair, NJ, and a scholarship cadet in the Army ROTC program, was recently presented a gold medal from the Lycoming Chapter of the Daughters of the American Revolution. Pinning the medal on Brown is Mrs. Glen W. Russell, president of the Women's Club.

ROTC Medals and Campaign Bars are awarded to student cadets of outstanding ability and achievement. Selection of students to receive the DAR ROTC awards is made by professors of military science and the presidents of colleges or universities. A student must demonstrate qualities of dependability and good character, adherence to military discipline, leadership ability, and a fundamental and patriotic understanding of the importance of ROTC training.

Kathleen Brown '88 receives the gold ROTC medal from Mrs. Glen Russell, Lycoming Chapter of the Daughters of the American Revolution.

FACULTY NOTES

JANET HURLBERT, instructional services librarian, had a chapter entitled "Library Instruction for the Small Academic Library: The Total Approach" accepted for publication in a book *The Smaller Academic Library: A Management Handbook* to be published by Greenwood Press.

DR. RICHARD HUGHES, associate professor of religion, has written a book, *Aggression and Expiation.* It has been published by the University Press of America. He develops a comprehensive, inter-disciplinary theory of aggression in human and animal nature.

JON BOGLE, associate professor and chair of the art curriculum, displayed several of his "cloud" aluminum wall reliefs in a two month sculpture show at the Cheltenham Art Center in Philadelphia this past fall.

DR. KATHLEEN D. PAGANA, assistant professor of nursing, presented a two-hour conference entitled "What's New in Diagnostic and Lab Testing?" at NURSING-EAST 1987 in White Haven, PA. She also had a poster presentation on the second edition of her book *Diagnostic Testing and Nursing Implications: A Case Study Approach,* published by C. V. Publishing Co.

DR. JOHN PIPER, professor of history, published an article "Robert E. Speer: His Call and the Missionary Impulse, 1890-1900" in the Summer 1987 issue of *American Presbyterian: Journal of Presbyterian History.*

DR. CAROLE MOSES had the article "Melville's 'Cunning' Reading of Spenser," published in *Melville Society Extracts,* No. 68, (1986).

SUE BEIDLER, associate professor and collection management services librarian, has been appointed to a seat on the governing board of PALINET and will serve a two-year term on the 14 member Board of Trustees of this non-profit service organization. PALINET provides fee-based automated online services to libraries and their subscriber membership of just under 300 academic, public and special libraries in Pennsylvania, New Jersey, Maryland and Delaware represents most of the libraries of the major academic and public library systems of these four states as well as some large corporate libraries.

DR. DAVID FRANZ, associate professor and chair of the chemistry department, and **DR. JOSEPH BULARZIK,** assistant professor of chemistry, attended the annual meeting of the Mid-Atlantic Association of Liberal Arts Chemistry Teachers (MAALACT), held in October at Gettysburg College. Dr. Franz was named president-elect of MAALACT for 1988. The organization includes 161 chemistry faculty from 96 liberal arts colleges; 86 members from 36 colleges were in attendance at Gettysburg.

DR. DAVID G. FISHER, assistant professor of physics, attended the NASA Lewis Research Center Conference, "Challenges for Tomorrow's Schools: A Perspective from Space," Orlando, FL, and the National Space Society Mini-Conference on Space held in Towson, MD. Both conferences were held in October. Two articles, "Twenty Five Years of Interplanetary Spacecraft" and "Reflections on Teaching Space Flight" have been accepted for publication in upcoming issues of the *California Aerospace Educator* and *World* magazine, respectively.

$1.5 Million Gift Goes To Lycoming College

A retired local businessman has contributed $1.5 million to Lycoming College, marking the largest planned gift in the college's history.

In making the contribution, Luther D. Heim, of Gamble Twp., expressed his desire to establish a lasting memorial to his parents, Joseph A. and Clara Stabler Heim.

Heim and his four deceased brothers, J. Allen, Horace, Russell and Walter, along with his sister, Mrs. Elizabeth H. Weaver, grew up in Montoursville. Their family started and operated Lycoming Silica Sand Co., Montour Auto Service Co. and the Montour Trading Corporation.

Horace and Walter were members of the college board of trustees.

In commenting on his gift, Heim, who retired in 1974, said he selected Lycoming as the recipient of his memorial tribute because of his interest in the college as a small, independent, nonprofit institution offering quality undergraduate instruction in the liberal arts and sciences.

"Lycoming is an extremely valuable asset to our community and the surrounding region," he said. "I believe in Lycoming and recognize its contribution to the quality of life in our area."

"Lycoming offers programs which help prepare young people for leadership responsibilities in a variety of professions and careers. I am very pleased with my decision to make this planned gift which will benefit our community and support the educational objectives of Lycoming College," Heim concluded.

Dr. Frederick E. Blumer, Lycoming president, reacted to Heim's gift by saying, "This significant contribution will have an immeasurable impact on the academic life of this institution. Philanthropy such as this has been vitally important to private education since the 1600's when John Harvard gave his library and land to establish the university which bears his name.

"This magnificent contribution will assist future generations to contribute effectively to our American way of life and enrich communities through their professional and personal service," he concluded.

Representatives of the college and the board of trustees are presenting several ideas to Heim for his consideration before selecting an appropriate family campus memorial.

The Founders Circle — New Recognition Club

A new leadership club, recognizing donors who annually contribute $2500 or more to Lycoming College, has been established. The Founders Circle is the latest recognition society to be added to the existing four categories: President's Cabinet, Dean's List, Associates Club and Century Club.

"Lycoming is fortunate, indeed, to have so many generous donors among its alumni and friends," said Dr. Frederick E. Blumer, College president. "Last year, alone, individuals generated more than $1.1 million in gifts to the College."

These gifts, according to Ralph E. Zeigler, Jr., Director of Development for Annual Support, reflect many sources—alumni, friends, parents, faculty and administration—and, they come in many forms—cash, stock, bequests, life income agreements, gifts-in-kind. The net result was an overwhelming two-fold increase in income from the previous year.

Also noted was a 26% increase among those individuals contributing at a leadership level of $100 or more, representing more than twice the number making such donations three years ago.

"These generous gifts have permitted Lycoming College to remain a source of pride in all of higher education," added Blumer.

This announcement follows yet another expansion of the development program at Lycoming. Earlier this year The Tower Society was established to recognize those individuals who have made future provisions for the College through their wills or other charitable arrangements.

Further information about either program may be obtained by contacting the Development Office at Lycoming Office by calling 1-(717)-321-4036.

L.B. Smith Educational Foundation announces new, higher limit

The L.B. Smith Education Foundation, Inc., of Camp Hill, PA, has granted to Lycoming College an increased allotment for the 1987-88 campaign year. The Foundation provides matching funds for individuals who contribute to selected colleges and who do not have a matching gift program available to them through their employers.

The L.B. Smith Foundation provides an additional distribution of 25% to individual or corporate gifts of cash, stocks, bonds or other securities. Such gifts must range from $100 to $5000. Gifts are made payable to the Foundation which receipts the gift and makes an increased allocation in return to Lycoming College.

"The L.B. Smith Educational Foundation has generously provided for many needs through their program," according to College President Frederick E. Blumer. "Their partnership is welcomed as we work toward the same goal of providing a quality educational program for our students."

Previously, an allocation of $7500 in matching funds was provided by the Foundation. This year, an increase to $10,000 was approved.

Alumni and friends of the College who would like additional information on making a gift using this method should contact the Development Office at Lycoming by calling 1-(717)-321-4036.

Do you work for a matching gift company?

More than 1,000 employers in the United States offer matching gifts to colleges and universities as a fringe benefit to their employees. Some companies match their workers' gifts dollar-for-dollar; some match on an even greater basis.

To know whether or not your company participates, check with your personnel office or contact the Development Office at Lycoming College, Williamsport, PA 17701-5192, and request the brochure, "Double Your Dollar."

National Fund Chairman, Committee Named

Richard W. DeWald '61, president of Montour Auto Service Co. and Montgomery Plumbing Supply Co., both of Montoursville, PA, and a trustee of Lycoming College since 1980, has been named national chairman of the 1987-88 Lycoming College Fund.

DeWald heads a campaign to raise $340,000 from various constituencies of the College. Funds obtained are used to support budgetary commitments which include student scholarships, faculty development grants, library acquisitions, and the updating of physical facilities.

Others serving one-year terms on the National Committee and the groups they represent are Douglas P. Trump '76, alumni; Cynthia J. Smith '88, students; Mr. and Mrs. Robert J. Shaner, parents; Dr. Robert A. Zaccaria, faculty; Mrs. Deborah E. Weaver, staff; Mrs. Elaine G. Rauff, friends.

Representing the leadership clubs are Dr. Dennis G. Youshaw '61, Century Club; Michael E. '80 and Marlene Moyer Trevisan '81, Associates Club; John J. Tarditi Jr. '62, Dean's List, and Matthew T. Gibbs '58, President's Cabinet.

DeWald represents the trustees and introduces the newest leadership club, the Founders Circle.

Commenting on the new chairman's appointment, College president, Dr. Frederick E. Blumer said, "We are fortunate, indeed, that Mr. DeWald has accepted this important leadership assignment. He brings with him important and valuable skills which he has shared with many other organizations throughout the area."

DeWald is active in numerous civic groups and serves as president of the Lycoming Foundation, and on the boards of The Williamsport Hospital and Medical Center, Northern Central Bank, Lycoming County Crippled Children's Society, West Branch Manufacturers' Association, and North Central Motor Club, among others. He and his wife, Nancy, are the parents of five children.

Dick DeWald '61, president of Montour Auto, is the 1987-88 national chair of the Lycoming College Fund.

Summer of '47 *(Continued from page 16)*

He attended Lycoming College in Williamsport, but played only one year. "If things would have worked out and I had gone to Penn State, perhaps I would have had a chance (at a pro career)," he said. "But personal things got in the way."

After graduating from Lycoming, Wool received his master's degree from Scranton (Pa.) College. After Scranton, he spent three years as a school principal in Homesdale, Pa., before moving to Winchester, Va.

He later moved to Virginia Beach, and has spent the last 13 years as an instructional specialist in the Virginia Beach School System.

Although none of the 1947 Maynard Little Leaguers ever played major league baseball, one member, Jack Losch, played pro football for the Green Bay Packers. Losch was a running back at the University of Miami and the Packers' No. 1 draft choice in 1956.

He is now the manager of the largest Pontiac dealership in Detroit.

Wool said most of the other players went on to successful careers. One, Walter Dunston, is a medical doctor. Dunston was one of three black players on the Maynard team.

"Out of our small group we've done well," Wool said. "I think it says something about organized sports, about pulling together and working together.

"They say that competition is inappropriate for young kids, but I don't know if I agree with that. If it's healthy competition, I feel it helps you later in life, whatever the endeavor. It helps you to reach down and tap some inner strength that wasn't there.

"Those were good days in Little League. I would love to relive those days — wool uniform and all."

Ken Ryan is a staff writer with The Virginian-Pilot and The Ledger-Star.

We are pleased to recognize the Century Club gift of Mrs. Harold Alsted, incorrectly listed in the September issue of the LYCOMING QUARTERLY. We also extend our apologies for the error.

CLASS NOTES

'49

R. ANDREW LADY has been appointed to the position of general administrator of the Plans Council of the Central Pennsylvania Conference of the United Methodist Church. The Plans Council is made up of more than 20 lay persons who are engaged in a detailed study of the capital fund needs of Central PA. Conference. The appointment was made by Bishop Felton E. May.

'50

STANLEY ROSENBERG was awarded the degree of Doctor of Humane Letters Honoris Causa by City University, Belleview, Washington in June, 1987. He has also formed a consulting firm in Public Health Education and has contracted with the Indian Health Service and the State Department of Health. He and his wife, DOROTHY COHICK '49, reside in Bozeman, MT. She is still writing children's historical fiction.

'52

FRED C. HICKOK recently assumed his duties with the United Methodist Charge at Robertsdale, PA. He and his wife, Marguerite, will serve the five churches that make up the Robertsdale charge.

'54

CHARLES M. MITCHELL has successfully established a trade journal for owners of small businesses entitled *Office Systems Dealer '87.* It is designed to give dealers their first look at products they might soon be selling to businesses.

'56

NORMAN E. HUFF is a pastor for the Lohr's Memorial United Methodist Church.

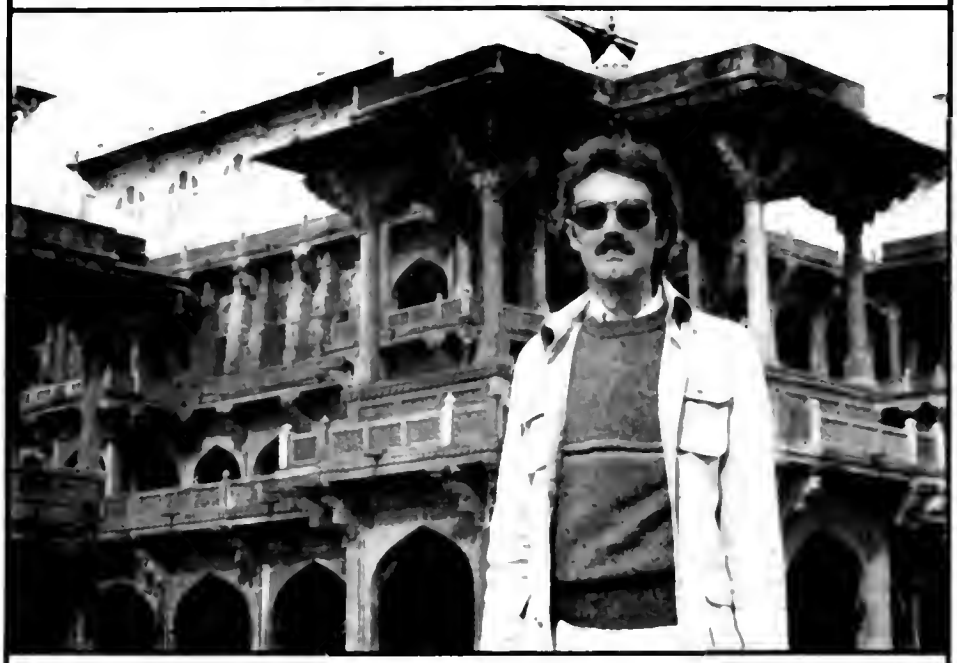
'57

WILLIAM L. BAKER was elected to a four-year term as synod treasurer, of the newly organized Upper Susquehanna Synod, of the new Evangelical Lutheran Church in America (ELCA) at a recent convention held at Zion Lutheran Church in Sunbury, PA. He is also the treasurer of Lycoming College.

'59

NORMAN E. ATEN was among the winners in the nation's top stock selectors contest sponsored by Barron's, a national financial weekly publication. He is a financial consultant with the Williamsport office of Merrill Lynch, Pierce, Fenner and Smith, Inc.

In The News



Television's most coveted award, the Emmy, has come to WILLIAM N. THOMAS, a 1966 graduate of Lycoming College and the son of Mr. and Mrs. David Thomas of South Williamsport.

Thomas, who serves the ABC Television Network as a chief producer in its Far East Bureau located in Hong Kong, was announced as an Emmy winner for his work as the coordinating producer concerning a major air disaster in the nation of Pakistan in 1986. The Thomas produced film report became a feature for the network's Nightline program.

This was the fourth time that Thomas has been nominated for an Emmy Award since he was assigned to the Far East Bureau.

Thomas, who graduated from the South Williamsport Area schools in 1965, was a theatre major at Lycoming. He was also involved with WRLC, the college radio station, and worked in commercial radio for WMPT (now WFXX).

After his college graduation he moved to New York City to pursue his theatre ambitions. He also took a job with ABC and was soon promoted to a producer's role. In that position he was responsible for producing and doing voice overs for news film clips that were available to ABC-TV affiliates throughout the nation. In that capacity his work was often seen locally over WNEP-TV out of Wilkes-Barre.

Thomas spent four years in the military service and one of his major assignments was on the Army Services Radio network from Seoul, Korea.

As a member of the Hong Kong bureau Thomas has produced several major news stories from all over Southeast Asia. For the past two years his major area of work has been in the Philippine Islands where he has covered much of the political upheaval following the overthrow of the Marcos regime. It was on one of his assignments to that nation that Thomas received word of his Emmy award.

CHRISTINE A. FORSEY is the property manager for Calibre Company of North Carolina, Inc. located in Charlotte.

'60

DAVID McCREADY is the inventor of the anti-rust device, named "The Rust Evader." This device costs about $300 installed and takes minute amounts of electricity from a car battery and passes it over the body of a car setting up electrical charges that are supposed to stop the chemical reaction. It is small enough to hold in one hand, attaches under the hood of a car and is available through mail order catalogs.

'62

GAIL ANDREA HUGHES EDWARDS is the owner of a business, American Brass, selling scale model brass trains. Her husband, JAY '63, is a cultural anthropologist at Louisiana State University and is presently a chief consultant on a federally-funded Acadian Cultural Center, soon to be built in LA.

DAVID A. KELLER is the new pastor at St. Andrew's United Methodist Church, Milton, PA. He has written numerous papers for religious publications, as well as computer software programs for church and conference use. He and his wife, C. Mardell, reside in Mahoning Manor with their two children.

'65

LAWRENCE FOCHT is one of three United Methodist pastors featured in a nationally distributed film and videotape, released this summer by United Methodist Communications (UMCom). He appears in "By the Rivers of Water," a 13-minute audiovisual resource that interprets the denomination's Ministerial Education Fund (MEF). He is the Pastor of Community United Methodist Church, New Cumberland, PA.

WENRICH H. GREEN has been appointed director of admissions at Thomas A. Edison State College, New Jersey's State College for Adults.

'67

NANCY L. ROBBINS has been named the executive director of the Central Intermediate Unit 10 which provides special education services including programs for mentally retarded, socially and emotionally disturbed, autistic, physically handicapped, learning disabled and gifted and talented children.

'69

JUDITH SAYRE GRIM has been elected president of Pi Lambda Theta, a national honor and professional association in education with headquarters in Bloomington, IN. Pi Lambda Theta, with 108 chapters located in the United States and the Philippines, provides leadership development for its members and the educational profession. She was listed in "Outstanding Young Women in America" in 1983. She and her husband, Joseph, live in Littleton, CO, with their two children.

RONALD R. MULBERGER is the pastor of Our Saviour Lutheran Church, Lansdowns, MD. He resides in Baltimore.

FRANK A. RICHMOND was commissioned to record an album commemorating the 1987 Woodstock Bicentennial, by Suzanne Warner Pierot. The concept album, "Tinker Street Suite" and the album, "Solo Piano" Ivan's Song were composed by Frank. The two records were given as a gift to Lycoming College.

DANNY W. ROSS is stationed with the 18th Airborne Corps, Fort Bragg, NC. A major in the U. S. Army, he is a plans officer.

'70

JOHN MARTHINSEN is currently a professor of economics at Babson College, Wellesley, MA, and spends his summers as a Senior Consultant at Handels Bank, N.W. in Zurich, Switzerland.

'71

STEVEN G. MILLER is teaching law studies and coaching football at St. Petersburg High School in Florida. He, and his wife, Claudia, reside in Redington Shores with their daughter, Frannie.

'72

JEFFREY ADAMS is teaching at the University of North Carolina, Greensboro campus. He has been awarded a 1987 Excellence Foundation Summer Fellowship for German and Russian with Reading Morike Writing Goethe: A Study in Literary Reception.

E. CATHY SMITH SPIETH is an assistant director of field operations for Dun and Bradstreet in Murray Hill, NJ. She resides in New Catasauqua, PA, with her nine year old son, Richard.

In The News

KENNETH E. MEYERS '74 is an assistant vice president of underwriting for Crum-Forster Personal Insurance Company in Basking Ridge, NJ. He and his wife, LAURIE TYMESON '75, have adopted two children from Korea. Sarah, five, arrived in December 1982, and Emily, two, arrived in December 1985.

'74

DOROTHY KOEHLER BLINDENBACHER recently received her M.S. in library and information studies from Drexel University. She is currently working as a school library/media specialist at Highland Regional Senior High School in Blackwood, NJ. She resides in Lindenwold.

BARRY P. DAWSON is serving as the pastor of the First Presbyterian Church of Kalispell, Montana. He is now a candidate in the Doctor of Ministry program at Austin Presbyterian Theological Seminary in Austin, Texas. He and his wife, Shelly, reside in Northwest Montana with their son, Bradley Paul.

JOSEPH M. KAC [illegible] is a staff obstetrician and [illegible] with the United States [illegible] Service/ Indian Health [illegible] in Gallup, New Mexico. [illegible] wife, the former CAR [illegible], reside in Gallup.

In The News

DR. LYNNE MOBBERLEY DEMING '70, appears in a videotape resource for use with a new 34-week Bible study produced by United Methodist Publishing House. The program, "Disciple: Becoming Disciples Through Bible Study," uses 10-minute video segments to introduce the topics to be studied by local church groups of 12 persons.

Dr. Deming, a 1970 graduate of Lycoming with a B.A. in religion, has been a staff member of UMPH since 1979. Currently, she serves as product development manager for the curriculum resources committee. As one of 18 nationally known biblical scholars, pastors and teachers participating in the project, Dr. Deming presents "God Restores the People."

The segment focuses on Second Isaiah, the message of hope that God gave to the people of Israel following the Babylonian exile, and the introduction of the servant theme. Dr. Deming highlights four passages from Isaiah concerning the servant theme, which represents "a kind of drama involving God, the servant and the people of Israel."

Dr. Deming notes that the servant, "clearly an individual, represents the people of Israel."

Dr. Lynne Deming (R) receives instructions from video producer Martha Moore in preparation for taping a segment of the "Disciple" Bible study.

She adds that although Second Isaiah "did not portray this servant as a messiah in the political sense of that word, the New Testament writers used these texts as background for the life and work of Jesus."

She concludes: "So God restores the people... But God also did more. God made Israel, represented by this Servant, a light to the nations to convert the world of God."

'75

JOHN R. HAND has accepted the position of production estimator for High Steel Structures, Inc. in Lancaster, PA.

SALLYJEANE HAINES STEIN is teaching third and fourth grades at the Stone Harbor Elementary School, NJ. She and her husband, Robert, reside in Millville.

'76

PAUL H. BESANCON, II has been named president of executive financial counseling for the Asset Management Group, Parsippany, NJ. His wife, the former LYNN (MARTIN '77), is a member of the firm, Dilworth, Paxson, Kalish and Kaufman. They reside in Maple Shade, NJ.

TIMOTHY F. BOLAND is employed with the Internal Revenue Service as a Revenue Officer. He and his wife, Peri, reside in Northampton, PA, with their daughter, Sara.

FRED E. HICKOK is a United Methodist minister for the Rebersburg United Methodist Parish in Rebersburg, PA. He resides there with his two sons, Fred and Anthony.

HAYDN McLEAN is the new pastor of the First United Methodist Church in Shamokin, PA. He and his wife, Janet, reside with their two children, Aaron and Megan, in Shamokin.

GAIL STEVENS PHISPANEN is a child specialist at Middletown Area Mental Health Services in Middletown, OH. She and her husband, Brian, reside in Cincinnati with their two children, Jessica and Bennett.

MICHAEL J. RUDINSKI is practicing law with MICHAEL E. GROULX '80 and G. SCOTT GARDNER '79 in the firm of Campana, Rudinski, Groulx and Gardner in Williamsport, PA. He resides in South Williamsport with his wife, Gina, and three sons.

ROBERT C. VOWLER has accepted the position of chief financial officer, secretary and treasurer of the Hershey Trust Company. He resides in Harrisburg, PA.

'77

PATRICIA SHARPLEY BROWN recently graduated from San Diego State University with a Master of Arts in educational administration, courtesy of the Navy. She was promoted to Lieutenant Commander on July 1, 1987, and is now working as a training budget analyst for the Office of the Chief of Naval Operations (OPNAV) in Washington, D.C.

MICHAEL CHIGLINSKY is an assistant professor of psychology at Radford University in Virginia. He completed his Ph.D. in clinical psychology at Georgia State University in Atlanta in August 1987. He resides in Radford with his wife, Joanne, and son, Brian.

'78

CATHY L. THOMPSON is currently an assistant professor at the University of Northern Iowa in Cedar Falls, Iowa.

'79

JOSEPH R. MAIOLO, III was recently transferred and promoted to project controller, for Rust International Corporation, Birmingham, AL. He and his wife, Emily, reside in the Birmingham area with their two children, Megan and Edward.

'80

ANGELO CALABRESE has received a Certificate of Completion from the University of Medicine and Dentistry of New Jersey. He has completed a one year internship of Clinical Training at St. Barnabas Medical Center, Livingston, NJ. He is currently in his second resident year at Mountainside Hospital in Montclair specializing in Internal Medicine. He and his wife, Norma, reside in Whippany.

ELIZABETH (BUFFY) FORD GULICK graduated with honors from the Chester County Hospital School of Nursing in West Chester, PA, as a licensed registered nurse. She served as president of her class and as a nursing assistant in the OB/GYN and Pediatric Departments. She received The Esther Eves Memorial Award for outstanding leadership and management. She currently holds an RN position in the Pediatric and Neonatal Nursery Departments of Chester County Hospital and is enrolled at Immaculata College pursuing her B.S.N. degree.

KIRBY L. FENTON is a police officer for the City of St. Petersburg, FL; residing there.

CATHRYN COLELLA FOSTER is a contracts specialist at Pitney Bowes, Cedar Knolls. She and her husband, a customer service respresentative with the same company, reside in Flemington, NJ.

JOHN H. LEA III is a lieutenant in the United States Naval Chaplain Corps at the Naval Air Station in Memphis, TN. He and his wife, DIANE M. (STIRONE '79), reside with their children, Shannon and Justin, in Millington.

JOHN C. SCALA was appointed as planetarium director for the Lenape Valley Regional High School District in Stanhope, NJ, where he also serves as the wrestling and track coach. He is the assistant planetarium director and instructor at the County College of Morris, Randolph, NJ.

KAREN ENSSLEN VINCI is employed as a sales representative for Harris/3M. She and her husband, David, reside in Maryland.

'81

BARBARA L. EMBERG has been promoted to director of accounting for Capital Health System, parent company of Harrisburg Hospital.

CAREY A. CALISTRI TADDEO is employed part-time at the Columbia Hotel. She and her husband, Albert, reside in Williamsport, PA.

'82

SHARON BECK is a staff auditor at Sun Company, Inc., Radnor, PA.

MICHELE A. MACKSOUD is opening and directing Computer Training Schools in Florida. She also directs a two year Business Operations School in several Correctional Institutions within the state of Florida. She resides in West Palm Beach.

Polcyn Loan Fund

During the 1986-87 fiscal year, Dr. Kenneth A. Polcyn '58 established an endowed loan fund in honor of his parents, Stanley S. and Dorothy M. Polcyn. The fund will assist varsity sport and student athletes.

Lycoming College gratefully acknowledges Dr. Polcyn's gift and his provision for future generations of Lycoming students.

Zymark: A Look Into The Future

This past September the alumni living in the Greater Boston Area were given an opportunity to look into the future by a fellow alumnus, Gerald L. Hawk '66, vice-president of Zymark Corporation. Alumni from the Class of 1918, represented by Dr. Stanton Barclay, to the Class of 20??, represented by several alumni children, enjoyed dinner followed by a tour and hands-on demonstration of a new technology that is "the most exciting advancement in laboratory automation of the past 15 years."

Zymark develops, manufactures and markets instrumentation to automate chemistry and biochemistry laboratories. At present there are approximately 1100 Zymate Systems installed worldwide serving such businesses as: Eastman Kodak, Dow, DuPont, Monsanto, Pfizer, Merk and Eli Lilly

Photo on left: Gerald Hawk '66 explains the basic movements of the Zymate Robotic Arm which when connected to the proper Zymate Hand is able to carry out a specified operation. By looking for similarities, sequences of common steps build upon each other to complete laboratory procedure.

JOHN RAMPOLLA has been named a manager in the audit department of Reinsel and Co., Reading, PA.

JEFFREY R. WERT has received a doctor of dental medicine degree from the Temple University School of Dentistry and received the award for outstanding clinical achievement from the American Society of Dentistry for Children, the American Academy of Gold Foil Operators and the American Association of Endodontists.

'83

KAREN SAYMAN BLACK is the manager of a retail supply house. She is also employed as a bookkeeper/private water analyzer for a plumbing and heating firm. She has recently attained her Black belt in Goshin Jutsu Karate. She and her husband, Clair, reside in Dushore, PA.

SUZANNE MIGLIARESE DAYNALT is employed as a litigation paralegal for the firm of High, Swartz, Roberts and Seidel, Norristown, PA.

AMY L. ELDER is employed as a teacher for the Baltimore County Public School system. She resides in Parkville, MD.

JOHN LEVAN GARMAN is an intern with the Metropolitan Hospital, Grand Rapids, Michigan. He and his wife, TRACEY (SHIMER '83), reside in Grand Rapids.

WADE M. MILLER is a sales manager for Current Therapeutics in Mendham, NJ. His wife, KIMBRA (SWIGART '82), is a computer programmer/analyst for New Jersey Bell in Madison. They reside with their son, Ryan Wesley, in Landing.

EDWARD JOHN NORRIS, M.D. has joined the Family Practice Residency Program in the family and community medicine department at Lancaster General Hospital as a transitional resident for one year.

KELLY S. STRONG ZICKLER is employed as office manager with Penn-Del Directory Corp., Wilkes-Barre, PA. Her husband, MARK L. '83 is working as an account executive for Penn-Del.

'84

PATRICIA L. BOWMAN is serving as a law clerk for President Judge Samuel C. Ranck in Northumberland County Court.

CAROL SCOTT is currently employed with World Life and Health Insurance Company of PA. She resides in King of Prussia.

Alumni Credential Files

In an effort to save space, it is necessary for the Career Development Center to reduce the credential files on an annual basis. Credentials are kept on file for a seven year period.

The class of 1980 is scheduled for removal this year, including teacher credential files. Any member of the class of 1980 who would like to continue an active file in the Career Development Center may do so by informing the CDC in writing or by calling our office at (717) 321-4034.

Alumni should keep in mind that the Career Development Center credential file **does not include transcripts. Transcripts continue to be available from the Registrar's Office.**

'85

CHRISTINE ALBERGO is an account executive for the public relations firm of Dorf and Stanton Communications in Stamford, CT. She resides in Montvale, NJ.

CHARLES CZULADA is an accountant level III with Gilbert Associates, an engineering firm. Previously, he was promoted to senior accountant at Laventhol and Horwath, a CPA Firm in Wilkes-Barre, PA. He resides in Leesport.

NORMAN BRUCE FAULKNER is employed as an accountant by Parente, Randolph, Orlando, Carey and Associates, Williamsport. He and his wife, Carol Anne, reside in Lewisburg.

JAMES C. HOUSE has been appointed to pastor of four churches in the Newton Hamilton, PA, area. He and his wife, Angela, reside in Newton Hamilton.

KARROL JO DOWD ISSLER is working as the executive assistant to the managing director of the Dai-Ichi Kangyo Bank in New York City. Her husband, STEPHEN L. '85, is working as an independent home improvements contractor in New York and New Jersey. They are living in Short Hills, NJ.

JANE M. McMANIGAL has received her Master of Science Degree in special education with a specialization in exceptional persons from Bloomsburg University in August, 1987.

'86

JULIA CARLYON is employed by the Communication Help Center for Kean College, Union, NJ.

DEBORA LYNN FLORY is employed by Joann Reichenbach's Day Care Center in Bartonsville, PA.

ROBERT J. GLUNK has been appointed assistant branch manager of the Montgomery Branch of Jersey Shore State Bank. He is continuing his banking education through the American Institute of Banking.

JOHN C. LITTLE is a computer science management trainee with the Penna. Liquor Control Board. He resides in New Cumberland.

DEBORAH MORRIS has been hired by the Sullivan County Children and Youth Services as a caseworker. She had previous experience with the Lycoming Children and Youth Program and the Adolescent Community Treatment Program (A.C.T.P.). She resides in Montoursville, PA.

JOHN L. O'BRIEN, a Marine 2nd Lt., has recently graduated from The Basic School. While attending The Basic School, located at the Marine Corps Development and Education Command, Quantico, VA, he was prepared as a newly-commissioned officer for assignment to the Fleet Marine Force and given the responsibility of a rifle platoon commander.

KARL RICHARD PIELMEIER, JR. is employed as a manager by The Service Team in Forest Inn, PA. He and his wife, Susan, reside in the Palmerton area.

MARY E. SHAUL is employed with the firm of Price Waterhouse in San Diego, CA, as an auditor. She resides in Bonita.

MARK C. SITLER is employed by the PMA Group as a property-casualty underwriter. He and his wife, Connie, reside in Mechanicsburg, PA.

ALAN J. WORTH has recently joined Penn Advertising, Inc. as an account representative. He is assigned to the Lewistown area.

'87

TINA M. MUHEIN is currently working for Colonial Penn Group, Inc. in Philadelphia, PA, as a life/health telemarketing representative. She resides in Ardmore

Marriages

Rona Lee Arena and DANIEL ARTHUR MILLER '71, June 27, 1987, Coopersburg, PA.

SALLYJEANE HAINES '75 and Robert R. Stein, July 10, 1987, Dewey Beach, DE.

CAROL MILLER '78 and Dean Helm, October 3, 1984, Easton, PA. DOLORES BROWN LiSOOEY '78 was Matron of Honor. Attendants included JOANNE CUTLER FARACE '77.

NANCY K. TUROUS '78 and Dennis H. Corbin, August 1, 1987, Gettysburg, PA.

Amphan Odnant and ROBERT BRUNGARD '79, Chiang Mai, Thailand.

Beth Koch and DAVID ARGALL '80, September 5, 1987, First United Methodist Church, Tamaqua, PA. Participants included STEPHEN DOERR '80 and ROBERT BUCKNAM '81.

KAREN ENSSLEN '80 and David Vinci, December 6, 1986, Penndel, PA.

KELLY S. STRONG '83 and MARK E. ZICKLER '83, May 16, 1987, Moscow, PA.

Laurie Ann Osmun and ROBERT JESSE BURNS, Jr. '85, April 4, 1987, Blairstown, NJ.

KARROLJO DOWD '85 and STEPHEN J. ISSLER '85, July 25, 1987, Middle Island, Long Island, NY.

Carol Anne Yonker and NORMAN BRUCE FAULKNER '85, June 27, 1987, Basking Ridge, NJ.

DEBORAH GALLAWAY '85 and William Youngblood, June 27, 1987. SHERI MANEVAL GUMMO '85 was a bridesmaid.

Terry Lynn Rathjen and DOUGLAS RICHARD NEWMAN '85, June 6, 1987, Brielle, NJ.

Pamela Darley Rockermann and THOMAS WILLIAM BUTTS '86, June 6, 1987, Ridgewood, NJ.

Deandra Dean and SCOTT McLEOD '86, Morristown, NJ.

Susan Alison Turko and KARL RICHARD PIELMEIER, JR. '86, Palmerton, PA.

Births

A son, Michael John, to BEVERLY ANN (EKEY '73) and Robert Langley, June 10, 1987.

A son, Brian James, to KATHERYN (CHANN '74) and Howard Neuberger, April 21, 1987.

A son, Bradley Paul, to Shelly and BARRY P. DAWSON '74, June 23, 1986.

A son, Daniel William, to ELISE (BREHMEYER '75) and Terry Castellanos, August 24, 1987.

A daughter, Alexandria Besancon, to ANDREA (BESANCON '77) and DOUGLAS RILEY KEPLER '78, June 9, 1987.

A daughter, Laura Christine, to NANCY (HUBKA '77) and David Hofmann, March 7, 1987.

A daughter, Caitlin Anne, to DOLORES (BROWN '78) and David LiSooey, August 28, 1987.

A son, Jason Andrew, to Lori A. and STEPHEN W. GOLD '80, July 21, 1987.

A daughter, Katharine Louise, to Susan and BRADLEY WEAVER '80, May 23, 1987.

A son, Leo Anthony, to CAREY A. (CALISTRI '81) and Albert J. Taddeo, September 26, 1985.

A son, Ryan Wesley, to KIMBRA (SWIGART '82) and WADE M. MILLER '83, June 7, 1987.

A daughter, Katherine Grace, to DAWN (JENKINS '87) and Michael D. Jenkins, September 8, 1987.

In Memoriam

I. NEWTON GRIFFITHS '28, East Berlin, PA, October 14, 1985.

JOHN NICHOLSON '30, St. Petersburg, FL, June 24, 1987.

KATHRYN WOOD CROSS '30, Philadelphia, PA, July 4, 1987.

ARNOLD EDGAR HOOD '33, Winter Garden, FL, August 22, 1987.

RICHARD M. CALKINS '47, January, 1987.

JAMES H. KEPLER '48, Santa Monica, CA, August 18, 1987.

FRANKLIN F. CRAYS, JR. '50, Williamsport, PA, July 23, 1987.

ANTHONY JOHN CIMINI '54, Williamsport, PA, August 25, 1987. Tony was in his seventh term as 83rd District Assemblyman in the Pennsylvania General Assembly. He was one of the senior Republican members. He is survived by his wife, one son, and two daughters.

ROBERT L. LAMBERT '67, Williamsport, PA, August 19, 1987. A former member of Lycoming's faculty, he is survived by two brothers, MICHAEL STRAKA '78 and Andrew Straka.

ROBERT SPIETH '72, North Catasauqua, PA, August 3, 1986, after a long bout with cancer. He is survived by his wife, the former CATHY SMITH '72, and one son, Richard, nine years old.

DREW E. MACHAMER '75, Lewisburg, PA, July 1987. His sister, ABBY MACHAMER '72, is one of his survivors.

Alumni Directory Completed

All telephone contact has been completed by Harris Publishing Company, publisher of our official Alumni Directory. The telephone callers verified the information which alumni provided on the questionnaires and the information currently held on alumni records. At the same time, the telephone representatives invited alumni to purchase personal copies of the directory.

The directory has been released. If you have not received your copy or are interested in ordering a copy and have not heard from the publisher, you may contact them directly at the following address:

Customer Service Department
Bernard C. Harris Publishing Company Inc.
3 Barker Avenue
White Plains, NY 10601

Lycoming Quarterly
Lycoming College
Williamsport, PA 17701-5192
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Calendar of Events

JANUARY

1	New Year's Day	
18	Concert at Noon Music for Winds and Piano	Clarke Chapel
16	Fabric by Cynthia Neely through February 19	Library Art Gallery
29	Artist Series Pittsburgh Symphony Orchestra	Capitol Theatre

FEBRUARY

1	Concert at Noon Clayton Cruse, Tenor	Clarke Chapel
12, 13 & 14 19 & 20	"Rashomon"	Arena Theatre
15	Artist Series Big River The Adventures of Huckleberry Finn	Capitol Theatre
20 - 26	National Invitational Photography Exhibition	Library Art Gallery
26	Concert at Noon Student Recital	Clarke Chapel

MARCH

1 - 19	National Invitational Photography Exhibition	Library Art Gallery
8	Music at Lycoming Lycoming College Tone Choir	Clarke Chapel
10	Artist Series Late Great Ladies of Blues and Jazz	Capitol Theatre
11	Concert at Noon Celebration of the Dance	Clarke Chapel
20	Music at Lycoming S.U.N.Y. Binghamton University Choir	Clarke Chapel
25	Concert at Noon Lycoming College Chamber Choir	Clarke Chapel